



1004848

SECTION F

PROCEDURES TO PREVENT HAZARDS

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SECTION F

PROCEDURES TO PREVENT HAZARDS

This section of the permit application provides a description of the procedures implemented at the Detrex Corporation Facility (Facility) located in Detroit, Michigan to prevent the possibility of a hazard such as the formation of toxic gases, evolution of extreme heat and/or explosions from occurring.

This information is provided pursuant to Michigan Act 64 Rule 299.9504(1) which incorporates 40 CFR § 270.14(b)(4), (5), (6), (8), and (9) by reference. The applicable section(s) of the Federal Regulations (40 CFR) is referenced as appropriate.

F-1 SECURITY

[40 CFR 264.14, 270.14(B)(4)]

F-1a SECURITY PROCEDURES AND EQUIPMENT

[40 CFR 270.14(B)(4), 264.14]

F-1a(1) 24-Hour Surveillance System

[40 CFR 264.14(b)(1)]

The Facility has a 24-hour electronic surveillance system. This system is in addition to the other security measures noted below.

F-1a(2)(a) Barrier

[40 CFR 264.14(b)(2)(i)]

The Facility is completely enclosed by a building of block construction. All entryways (including doors and loading docks) are locked after business hours or when the Facility is unattended.

An 8-foot high chain-link fence with razor wire surrounds much of the Facility. This in conjunction with the building prevents unauthorized entrance by people to the hazardous waste storage areas. Attachment F-3 provides a Facility plan illustrating security precautions.

F-1a(2)(b) Means To Control Entry

[40 CFR 264.14(b)(ii)]

As described above, the hazardous waste container storage areas are located within a single secure building which is locked when the Facility is unattended to prevent access of unauthorized persons. This will require that an employee be present in the warehouse whenever the two most southern doors along the east side of the building are open. The central door is also equipped with a motion-detector alarm that is activated should unauthorized individuals attempt to enter the Facility when the door is open.

In addition, during normal business hours, office personnel are available to maintain records of visitors, including other Detrex employees who do not work at this office; this is accomplished through a sign-in log in which visitors are required to denote their arrival and departure times.

F-1a(3) Warning Signs
[40 CFR 264.14(c)]

Warning signs which bear the legend Danger - Unauthorized Personnel Keep Out are be posted at each entrance of the active portion of the Facility. These warning signs are to be posted in sufficient numbers to be seen from any approach to the active portion of the Facility from a minimum distance of 25 feet. An example is shown in Attachment A-3.

F-1b WAIVER
[40 CFR 264.14(A)]

Detrex considers the above noted security precautions to be sufficient to prevent unauthorized access to hazardous waste management areas. The Facility is provided with a physical barrier and a means to control entry. Therefore, a waiver of security procedures and equipment requirements per 40 CFR §264.14(a) is not necessary.

F-2 INSPECTION SCHEDULE
[40 CFR 270.15, 270.14(B)(5)]

F-2a GENERAL INSPECTION REQUIREMENTS
[40 CFR 270.14(b)(5), 264.15(a) and (b), 264.33]

The Facility conducts daily inspections of the hazardous waste storage areas for leaking or deteriorating containers that could cause or lead to the release of hazardous waste constituents to the environment or threaten human health. Regular scheduled inspections of the entire Facility are completed on a weekly basis. These inspections include all container handling equipment, security measures, emergency response equipment (i.e. spill control equipment, fire protection equipment and monitoring equipment), communication and first-aid equipment, and the secondary containment systems.

It is important to note that all of the hazardous waste management units are contained either within a single enclosed building or within the confines of the transfer station. Thus, personnel are almost continually working within or near the areas and are encouraged to be observant at all times.

F-2a(1) Types of Problems
[40 CFR 264.15(b)(3)]

Based on the nature of the operations at the Facility, the primary concern is the occurrence of leaks and/or spills. Inspection schedules for monitoring secondary containment areas and loading and unloading areas were developed with the goal of promptly identifying leaks or spills. Safety and emergency equipment inspection schedules include troubleshooting concerns associated with the equipment. As such each item of emergency equipment will be checked. For example, the phone system will be checked to insure that outside lines work; the sprinkler system, to insure that valves are open and system pressure is in the correct range; and emergency lighting, to insure that the battery is holding a charge. Other items like drum pumps and drum hand trucks are checked to insure that they are present and in good working order. Attachment F-4 presents the typical schedule for inspection and identifies the various items to be inspected and the types of things to be inspected.

Attachment F-5 shows an example of a typical daily and weekly inspection log which may be used at the Facility and is discussed in greater detail in section F-2d. During inspections, employees will use the inspection schedule (Attachment F-4), along with their knowledge of the Facility and process equipment. The forms are designed to encourage personnel to include their observations when examining specific items, rather than just checking off a form. Other facilities have used similar forms with excellent results. Each inspection record is kept on file at the Facility for a minimum of three years.

Any deteriorating or malfunctioning equipment or structure identified during an inspection will be remedied (i.e., repaired or replaced) to ensure that the problem does not lead to a human health or environmental hazard. If a hazard is determined to be potentially imminent, the remedy will be taken immediately upon discovery.

F-2a(2) Frequency of Inspections
[40 CFR 264.15(b)(4)]

Attachment F-4 includes the frequency of inspection for each item. The frequency of inspection is based on:

- 1) the probable deterioration of equipment based on use and handling,
- 2) the probability of equipment deterioration or operator error resulting in an incident which is harmful to human health or the environment, and

3) regulatory requirements.

F-2b SPECIFIC INSPECTION REQUIREMENTS

[40 CFR 270.14(B)(5), 264.15(B)(4)]

The following sections outline specific inspection requirements.

F-2b(1) Container Inspection
[40 CFR 264.174]

Hazardous waste containers are inspected prior to acceptance to ensure they meet the criteria for acceptance. The containers are also inspected daily for signs of leaks or deterioration and to ensure the containers are properly marked and labeled.

F-2b(2) Tank System Inspection
[40 CFR 264.195]

F-2b(2)(a) Tank System External Corrosion And Releases
[40 CFR 264.195(b)(1)]

This Facility has closed all operations involving the storage of hazardous wastes in storage tanks. Tanks located at the Facility may be used for the storage of NON-RCRA or Non-Hazardous Wastes.

F-2b(2)(b) Tank System Construction Materials And Surrounding Area
[40 CFR 264.195(b)(3)]

This section is not applicable as the Facility does not store any hazardous wastes in storage tanks.

F-2b(2)(c) Tank System Overfilling Control Equipment
[40 CFR 264.195(a)]

This section is not applicable as the Facility does not store any hazardous wastes in storage tanks.

F-2b(2)(d) Tank System Monitoring And Leak Detection Equipment
[40 CFR 264.195(b)(2)]

This section is not applicable as the Facility does not store any hazardous wastes in storage tanks.

F-2b(2)(e) Tank System Cathodic Protection
[40 CFR 264.195(c)]

This section is not applicable as the facility does not store any hazardous wastes in storage tanks; thus, Cathodic protection is not required.

F-2b(3) Waste Pile Inspection
[40 CFR 270.18(d), 264.254(b)]

This section not applicable to this Facility.

F-2b(4) Surface Impoundment Inspection
[40 CFR 270.17(c), 264.226(b), 264.226(c)]

This section not applicable to this Facility.

F-2b(5)(a) Incinerator and Associated Equipment
[40 CFR 264.347(b)]

This section not applicable to this Facility.

F-2b(6) Landfill Inspection
[40 CFR 264.303(b)]

This section not applicable to this Facility.

F-2b(7) Landfill Treatment Facility Inspection
[40 CFR 264.273(g)]

This section not applicable to this Facility.

F-2b(8) Miscellaneous Unit Inspections
[40 CFR 270.14(b)(5), 264.602]

This section not applicable to this Facility.

F-2b(9) Boilers and Industrial Furnaces (BIF) Inspections
[40 CFR 264.15, 266.102(a)(2)(ii), 266.102(e)(8), 266.111(e)(3)]

This section not applicable to this Facility.

F-2b(10) Containment Building Inspection
[40 CFR 264.1101(c)(3), 264.1101(c)(4)]

This section not applicable to this Facility. Notwithstanding this, the entire hazardous waste management area of the building is inspected on a regular basis.

F-3 WAIVER OF DOCUMENTATION OF PREPAREDNESS AND PREVENTION REQUIREMENTS
[40 CFR 270.14(B), 264.32(A) THROUGH 264.32(D)]

Detrex Corporation does not wish to request a waiver of the preparedness and prevention requirements under 40 CFR Part 264 Subpart C. Requirements of this Subpart are also addressed in the Contingency Plan found in Section G of this permit application.

The Detroit Fire Department (DFD) is familiar with the hazardous waste management operation, and with the Contingency Plan for the Facility (see Section G-6).

F-3a EQUIPMENT REQUIREMENTS
[40 CFR 270.14(B), 264.32]

F-3a(1) Internal Communication
[40 CFR 264.32(a)]

Internal communication may be accomplished via hand held two-way radios, by verbal communication, PA system, or by some other means. Since the hazardous waste storage areas are adjacent to the lab area and the office, and the entire Facility is relatively small, communication can usually be most effectively achieved verbally in the event of an emergency.

F-3a(2) External Communications
[40 CFR 264.32(b)]

Storage areas and the office areas are equipped with telephones which can be used to request emergency assistance. The location of the telephones are shown in Attachment F-6.

F-3a(3) Emergency Equipment
[40 CFR 264.32(c)]

Location of Facility emergency equipment is shown in Attachment F-6. This equipment includes:

- 1) Absorbent Material;
- 2) First-Aid Kit;
- 3) Eye Wash/Safety Shower;
- 4) Self-Contained Breathing Apparatus;
- 5) Respirators;
- 6) Fire Extinguishers;
- 7) Main Electrical & Gas Disconnects;
- 8) Gloves; and
- 9) Boots.

All emergency and safety equipment is routinely inspected and tested in accordance with the inspection schedules provided in Section F-2a to ensure its proper operation in the event of an emergency. Any equipment requiring decontamination after use in a response will be performed by using an appropriate cleaning agent (e.g., steam

cleaning, scrubbing with hot water and/or sand blasting) which will be selected based on the characteristics of the released material.

Decontamination of equipment after use will also depend upon the type of equipment. For PPE (like respirators), soap and water followed by bleaching or use of a commercial sanitizing solution may be enough. Supplies used in decontamination such as brushes, soap, buckets which are available from local stores will be maintained at the Facility. Other decontamination equipment needed to perform specific jobs or for use on larger equipment may be contracted out to local emergency response agencies who have the equipment necessary to perform larger decontamination jobs.

Wastes generated from the decontamination process, if determined to be a hazardous waste, will be packaged in DOT-approved containers and stored in the hazardous waste containment area approved for that material. If decontamination of the storage area is required, the Facility Manager will place the material in the staging area and make arrangements to have it removed as soon as possible.

F-3a(4) Water For Fire Control
[40 CFR 264.32(d)]

There are two fire hydrants, serviced by an 8-inch diameter watermain, located near the Facility along Eaton Avenue. The nearest is only about 25 feet south of the south end of the Facility.

A review of the new codes being included in this application indicates that the Facility is not at an increased risk of fire or explosion.

F-3b AISLE SPACE REQUIREMENTS
[40 CFR 264.35]

Hazardous wastes will be stored in the container storage areas in single rows with an approximately 30-inch aisle space between each row (See photographs in Attachment A-3). The use of single aisles will permit room for inspection of the containers and the detection of release. In addition, this space will allow for the unobstructed movement of personnel, fire protection equipment, and spill control equipment utilized at the Facility. Containers can be moved for spill cleanup and container decontamination as necessary.

F-4 PREVENTATIVE PROCEDURES, STRUCTURES, AND EQUIPMENT

[40 CFR 270.14(B)(8)]

F-4a LOADING / UNLOADING OPERATIONS

[40 CFR 270.14(B)(8)(I)]

The unloading of containerized hazardous wastes occurs at the middle overhead door on the east side of the building. The door of the loading area is diked with a concrete ramp to maintain secondary containment while allowing for easy movement of containers. Containerized wastes are unloaded and placed in the staging area pending screening as per the waste analysis plan (Section C).

Containers of hazardous waste are primarily transported into and about the warehouse by a fork lift. Hand trucks and other material handling practices also allow for movement of DOT containers inside the hazardous waste storage area.

All loading / unloading operations are conducted under the supervision of Detrex personnel and the area used for unloading is inspected at the conclusion of unloading operations to ensure no spillage has occurred. In addition, the transport vehicle and the loading/unloading area is inspected immediately following a transfer to ensure all wastes have been removed and no spillage has occurred during movement of the waste.

F-4b RUN-OFF CONTROL

[40 CFR 270.14(B)(8)(II)]

The hazardous waste container storage areas are located within an enclosed building. This prevents accumulation of run-on waters in the hazardous waste storage areas. As presented in Section B of this operating license application, surface runoff is directed away from the building structure in all areas except along a portion of the east wall. A 12-inch square, 6-inch deep sump is located within the concrete loading/unloading area to provide runoff control. The accumulated runoff is tested. If the water meets the conditions for discharge, it is transferred into the municipal sanitary sewer system through a drain located in the Boiler Room. If the water fails to meet discharge requirements it will be collected and containerized for off-site disposal in accordance with Federal, State and local regulations. A 12-inch diameter, 6-inch deep catchbasin is located within the Transfer Facility, however this is independent of the TSDF operation and no accumulated liquids are discharged to the ground.

F-4c WATER SUPPLIES
[40 CFR 270.14(B)(8)(III)]

All water at this Facility is received from the municipal water main previously noted in Section B-2a(9) and F-3a(4). Contamination of the water supply is not possible since the secondary containment systems will hold all leaks or spills at the Facility, and thus will not come into contact with the water supply.

F-4d EQUIPMENT AND POWER FAILURE
[40 CFR 270.14(B)(8)(IV)]

Failure of power, or of other equipment at this Facility would, in the worst case, cause the hazardous waste operations at the Facility to be suspended. All equipment used in the transfer of wastes in the Facility will shut down in a "fail-safe" mode.

The building alarm system is provided with an emergency back-up battery to ensure its continued operation during periods of power outage. This will insure that the alarm system continues to provide security and fire protection.

F-4e PERSONAL PROTECTION EQUIPMENT
[40 CFR 270.14(B)(8)(V)]

Personal protective equipment (PPE) is provided at the Facility to prevent exposure of personnel to hazardous waste in the event of an emergency. This equipment includes appropriate protective clothing and eye protection, a safety shower, and an emergency eye wash to be used in the event a person is splashed with waste. Additionally, self contained breathing apparatus and respirators are available in the event of an emergency vapor release. The Facility is also provided with a telephone, an intercom system and two-way radios which can be used to warn personnel in the event of an emergency.

The location of emergency equipment available at the Facility is shown on Attachment F-6.

F-5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE AND INCOMPATIBLE WASTES
[40 CFR 270.14(B)(9)]

A list of current and proposed waste codes to be managed at the Facility is provided in Table F-1.

The Facility does not store or process any ignitable or reactive wastes. All incoming wastes are tested as part of the Screening Procedures (see Section C) to ensure that reactive wastes are not inadvertently accepted. Procedures are also in place to insure that no wastes are stored with any other material which could react with it in the event of a leak or spill.

F-5a PRECAUTIONS TO PREVENT IGNITION OF IGNITABLE WASTES OR REACTIVE WASTES
[40 CFR 270.14(B)(9), 264.17(A)]

This section does not apply as the Facility does not accept ignitable waste.

F-5b PRECAUTIONS TO PREVENT COMMINGLING OF INCOMPATIBLE WASTES
[40 CFR 270.14(B)(9), 264.17(B)]

The Facility handles all permitted wastes such that incompatible waste types are segregated when they are received at the Facility. Incompatible wastes are subsequently handled and stored separately. Incompatible waste types have been determined for all proposed and current waste codes in accordance with the US Department of Commerce's National Technical Information Service (NTIS) document *A Method for Determining the Compatibility of Hazardous Waste*, publication number PB80-221005. The following incompatibility considerations were evaluated when separation guidelines were established.

Classifications and separations of the waste types are based on chemical family. It should be noted that many chemicals exhibit characteristics associated with several chemical families due to their composition (i.e. chlorobenzene is classified as a halogenated compound due to the presence of a chlorine molecule and is classified as an aromatic compound due to its benzene structure). Therefore, the compatibility evaluation of two chemicals, at times, involves more than two chemical family comparisons. Furthermore, during the evaluation of waste types, each currently accepted and proposed chemical was evaluated with respect to:

- 1) its chemical family characteristic(s); and

- 2) its potential incompatibility with every other currently accepted and proposed chemical characteristic.

The chart on which the incompatible waste studies were performed is provided in Attachment F-7. Attachment F-1 and Attachment F-2 provides a list of the hazardous wastes and a listing of the reactivity group numbers including the constituents within each group. This chart is taken from the previously referenced document for the determination of incompatible waste types.

Waste handling practices, as described in Sections F-5d and F-5e, have been designed to ensure potentially incompatible wastes are not mixed.

F-5c MANAGEMENT OF IGNITABLE OR REACTIVE WASTES IN CONTAINERS
[40 CFR 270.15(C), 264.176]

This Facility does not accept any reactive wastes.

F-5d MANAGEMENT OF INCOMPATIBLE WASTES IN CONTAINERS
[40 CFR 270.15(D), 264.177]

Incompatible waste types are segregated and stored in secondary containment areas which are separated by curbing. This will prevent the mixing of incompatible wastes in the event of an accidental release. This should preclude one or more of the following incidents:

- 1) Generation of extreme heat or pressure, fire or explosions, or violent reactions;
- 2) Production of uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
- 3) Production of uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;
- 4) Damage to the structural integrity of the device or Facility; and
- 5) Through other like means, threaten human health or the environment.

Waste segregation procedures have been developed as described in Section F-4b above. Wastes are only accepted if an appropriate secondary containment area (empty of all waste which is potentially incompatible with the waste to be accepted) exists.

F-5e MANAGEMENT OF IGNITABLE OR REACTIVE WASTES IN TANK SYSTEMS
[40 CFR 270.16(J), 264.198]

This section does not apply as the Facility does not handle or store any hazardous wastes in tanks.

F-5f MANAGEMENT OF INCOMPATIBLE WASTES IN TANK SYSTEMS
[40 CFR 270.16(J), 264.199]

This section does not apply as the Facility does not handle or store any hazardous wastes in tanks.

F-5g MANAGEMENT OF IGNITABLE OR REACTIVE WASTES PLACED IN WASTE PILES
[40 CFR 270.18(G), 264.256]

This section not applicable to the Facility.

F-5b MANAGEMENT OF INCOMPATIBLE WASTES PLACED IN WASTE PILES
[40 CFR 270.18(H), 264.257]

This section not applicable to the Facility.

F-5i MANAGEMENT OF IGNITABLE OR REACTIVE WASTES PLACED IN SURFACE IMPOUNDMENTS
[40 CFR 270.17(H), 264.229]

This section not applicable to the Facility.

F-5j MANAGEMENT OF INCOMPATIBLE WASTES PLACED IN SURFACE IMPOUNDMENTS
[40 CFR 270.17(H), 264.230]

This section not applicable to the Facility.

F-5k MANAGEMENT OF IGNITABLE OR REACTIVE WASTE PLACED IN LANDFILLS
[40 CFR 270.21(F), 264.312]

This section not applicable to the Facility.

F-5l MANAGEMENT OF INCOMPATIBLE WASTES PLACED IN LANDFILLS
[40 CFR 270.21(G), 264.313]

This section not applicable to the Facility.

**F-5m MANAGEMENT OF IGNITABLE OR REACTIVE WASTES PLACED IN LAND
TREATMENT UNITS**
[40 CFR 270.20(G), 264.281]

This section not applicable to the Facility.

**F-5n MANAGEMENT OF INCOMPATIBLE WASTES PLACED IN LAND TREATMENT
UNITS**
[40 CFR 270.20(H), 264.282]

This section not applicable to the Facility.

F-5o MANAGEMENT OF INCOMPATIBLE WASTES IN CONTAINMENT BUILDINGS
[40 CFR 264.1101(A)(3)]

This section not applicable to the Facility.

ATTACHMENT F-1

LIST OF HAZARDOUS WASTES

TABLE F-1
LIST OF HAZARDOUS WASTES

<i>Waste</i>	<i>EPA Hazardous Hazardous Waste Number and Hazard Code</i>
Corrosive Waste	D002(C)
Arsenic	D004(T)
Barium	D005 (T)
Cadmium*	D006(T)
Chromium	D007(T)
Lead	D008(T)
Mercury	D009(T)
Selenium*	D010(T)
Silver	D011(T)
Benzene	D018(T)
Carbon Tetrachloride	D019(T), U211(T)
Chlorobenzene	F002(T), D021(T), U037(T)
Chloroform	D022(T), U044(T)
1,4-Dichlorobenzene	D027(T), U072(T)
1,2-Dichloroethane	D028(T), U077(T)
1,1-Dichloroethylene	D029(T), U078(T)
2,4-Dinitrotoluene	D030 (T)
Heptachlor*	D031(T)
Hexachlorobenzene	D032(T), U127(T)
Hexachloroethane	D034(T), U131(T)
Methyl Ethyl Ketone	D035(T)
Nitrobenzene	D036(T)
Tetrachloroethylene	F001(T), F002(T), D039(T), U210(T)
Trichloroethylene	F001(T), F002(T), D040(T), U228(T)
Vinyl Chloride	D043 (T)
1,1,2,2-Tetrachloroethane	U209(T)
1,1,1,2-Tetrachloroethane	U208(T)
Dichlorodifluoromethane	U075(T)
1,1-Dichloroethane	U076(T)
1,1,1-Trichloroethane	F001(T), F002(T), U226(T)
Dichloromethane	U080(T)
Trichlorofluoromethane	F001(T), F002(T), U121

Wastewater treatment sludges from electroplating

Note:

Hazard Code based on 40 CFR 261.

Wastes may be liquid or solid.

* Extremely Hazardous Waste

H Acute Hazardous Waste

MI ATCH-F1.DOC

T

C

Toxic Waste

Corrosive Waste

12/06/96

TABLE F-1
LIST OF HAZARDOUS WASTES

<i>Waste</i>	<i>EPA Hazardous Hazardous Waste Number and Hazard Code</i>
--------------	---

Wastewater treatment sludges from electroplating operations except from the following processes:

- | | |
|---|------|
| <ol style="list-style-type: none"> 1. sulfuric acid anodizing of aluminum; 2. tin plating on carbon steel; 3. zinc plating (segregated basis) on carbon steel; 4. aluminum or zinc-aluminum plating on carbon steel; 5. cleaning/stripping associated with tin, zinc and 6. aluminum plating on carbon steel; and 7. chemical etching and milling of aluminum. | F006 |
|---|------|

<p>Waste water treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process</p>	F019
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ATTACHMENT F-2

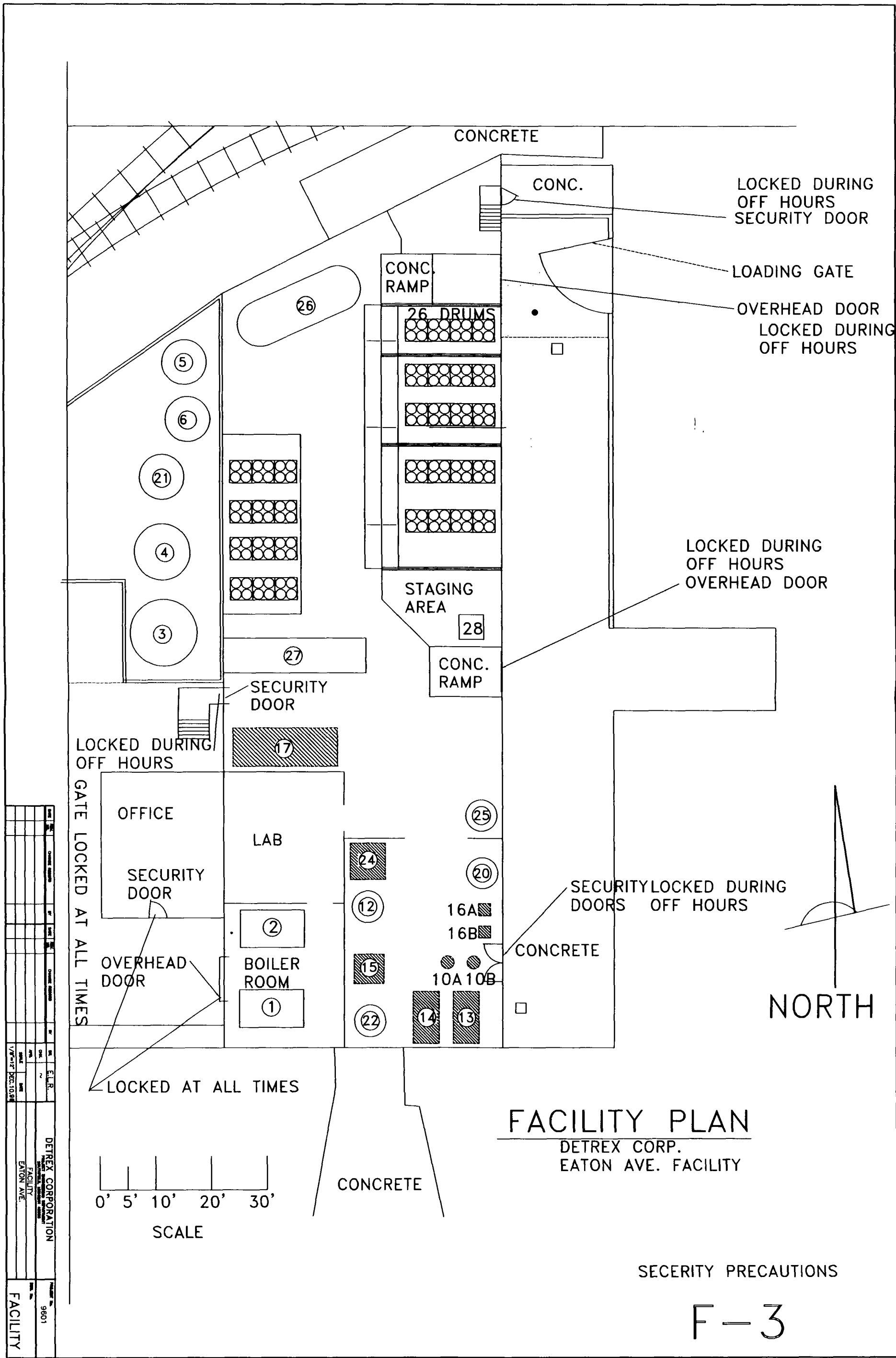
HAZARDOUS WASTE GROUPS

ATTACHMENT F-2
HAZARDOUS WASTES GROUPS

<i>Reactivity Group Number</i>	<i>Group Name and Constituents</i>
<u>Corrosive Materials</u>	
1, 2, 3	Acids
10	Caustics
16	<u>Aromatic Hydrocarbons</u> Benzene 2,4-Dinitrotoluene Nitrobenzene
17	<u>Halogenated Organics</u> Heptachlor Carbon tetrachloride Chloroform 1,4-Dichlorobenzene 1,2-Dichloroethene 1,1-Dichloroethylene Hexachlorobenzene Tetrachloroethylene Trichloroethylene Dichlorodifluoroethane 1,1-Dichloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,1,2-Tetrachloroethane Dichloromethane Trichlorofluoromethane Chlorobenzene (distillation or fractionation column bottoms) Hexachloroethane Vinyl Chloride
19	<u>Ketones</u> Methyl ethyl ketone
24	<u>Metals</u> Cadmium Chromium Lead Mercury Selenium Silver Arsenic Barium

ATTACHMENT F-3

SECURITY PRECAUTIONS



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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ATTACHMENT F-4

INSPECTION SCHEDULE

ATTACHMENT F-4

HAZARDOUS WASTE INSPECTION SCHEDULE

<i>Items</i>	<i>Type of Problem</i>	<i>Inspection Frequency</i>
Hazardous waste container storage areas	<ul style="list-style-type: none"> - Leaking containers - Bungs secure / properly secured - Corrosion on containers - Proper stack height - Proper labeling/markings - Adequate Aisle space 	Daily
Secondary Containment	<ul style="list-style-type: none"> - Base free of cracks and intact - Presence of Free Liquid 	Daily
Loading/unloading area	<ul style="list-style-type: none"> - Spills - No cracks / Leaks, joints intact 	Daily
Sump Pump	<ul style="list-style-type: none"> - Operational - Available - Leaks 	Weekly
Container handling equipment (fork lift, grapple, pallet jack, drum hand cart)	<ul style="list-style-type: none"> - Operational - Available 	Daily, when used
Absorbent material	<ul style="list-style-type: none"> - Adequate supply 	Weekly
Barriers to prevent entry		
Doors	<ul style="list-style-type: none"> - Open freely - Locks function 	Daily
Signs	<ul style="list-style-type: none"> - Present 	Weekly
Fences	<ul style="list-style-type: none"> - Intact 	Weekly
Personnel Protective Equipment (gloves, aprons, goggles, face shields)	<ul style="list-style-type: none"> - Adequate supply 	Weekly

ATTACHMENT F-4

HAZARDOUS WASTE INSPECTION SCHEDULE

<i>Items</i>	<i>Type of Problem</i>	<i>Inspection Frequency</i>
Respirator		
SCBA	- Loss of pressure in tank - Available	Weekly
Air Purifying	- Available and adequate supplies - Properly Stored	Weekly
Fire Protection-		
Extinguisher	- Available - Loss of pressure	Weekly
Eye wash station/ safety shower	- Functions - Scale or rust in water	Weekly
First Aid Kit	- Available - Adequate supplies	Weekly
Communication equipment		
Telephones	- Operational	Weekly
Intercom, 2-way radios	- Operational/available	Weekly
Emergency lighting	- Operational	Monthly
Decontamination Equipment	- Adequate supplies	Weekly

ATTACHMENT F-5

TYPICAL INSPECTION RECORD

BRANCH LOCATION: _____

WEEK ENDING: _____

FACILITY DAILY INSPECTION FORM					
INDICATE CONDITIONS					
INSPECTION ITEM	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Hazardous Waste Container Storage Area					
Loading / Unloading					
Container Handling Equipment					
Barriers to prevent entry					
Signature					
Date					
Time					
Comments concerning problems or potential problems (include: date, time, and nature of repairs or remedial actions taken to mitigate problems):					

NOTE: REFER TO HAZARDOUS WASTE INSPECTION SCHEDULE FOR DETAILS ON TYPES OF PROBLEMS WHICH MAY BE ENCOUNTERED
ATTACHMENT F-5

HAZARDOUS WASTE INSPECTION SCHEDULE

<i>Items</i>	<i>Type of Problem</i>	<i>Inspection Frequency</i>
Hazardous waste container storage areas	<ul style="list-style-type: none"> - Leaking containers - Bungs secure / properly secured - Corrosion on containers - Proper stack height - Proper labeling/markings - Adequate Aisle space 	Daily
Secondary Containment	<ul style="list-style-type: none"> - Base free of cracks and intact - Presence of Free Liquid 	Daily
Loading/unloading area	<ul style="list-style-type: none"> - Spills - No cracks / Leaks, joints intact 	Daily
Container handling equipment (fork lift, grapple, pallet jack, drum hand cart)	<ul style="list-style-type: none"> - Operational - Available 	Daily, when used
Barriers to prevent entry		
Doors	<ul style="list-style-type: none"> - Open freely - Locks function 	Daily

BRANCH LOCATION: _____

WEEK ENDING: _____

FACILITY WEEKLY INSPECTION FORM INDICATE CONDITIONS		
Equipment to inspect	possible problems	status / condition
Respirators	Quantity and availability	
Personnel Protective Equipment	Quantity and availability	
Eye Wash / Safety Showers	Quantity and availability	
First Aid Kit	Quantity and availability	
Communication Equipment	Quantity and availability	
Emergency Lighting	Operational	
Decontamination Equipment	Quantity and availability	
Fire Protection	Quantity and availability	
Absorbent Materials	Quantity and availability	
Loading / Unloading Area	Equipment operational	
Signature, Date, Time		
Comments concerning problems or potential problems (include: date, time, and nature of repairs or remedial actions taken to mitigate problems):		

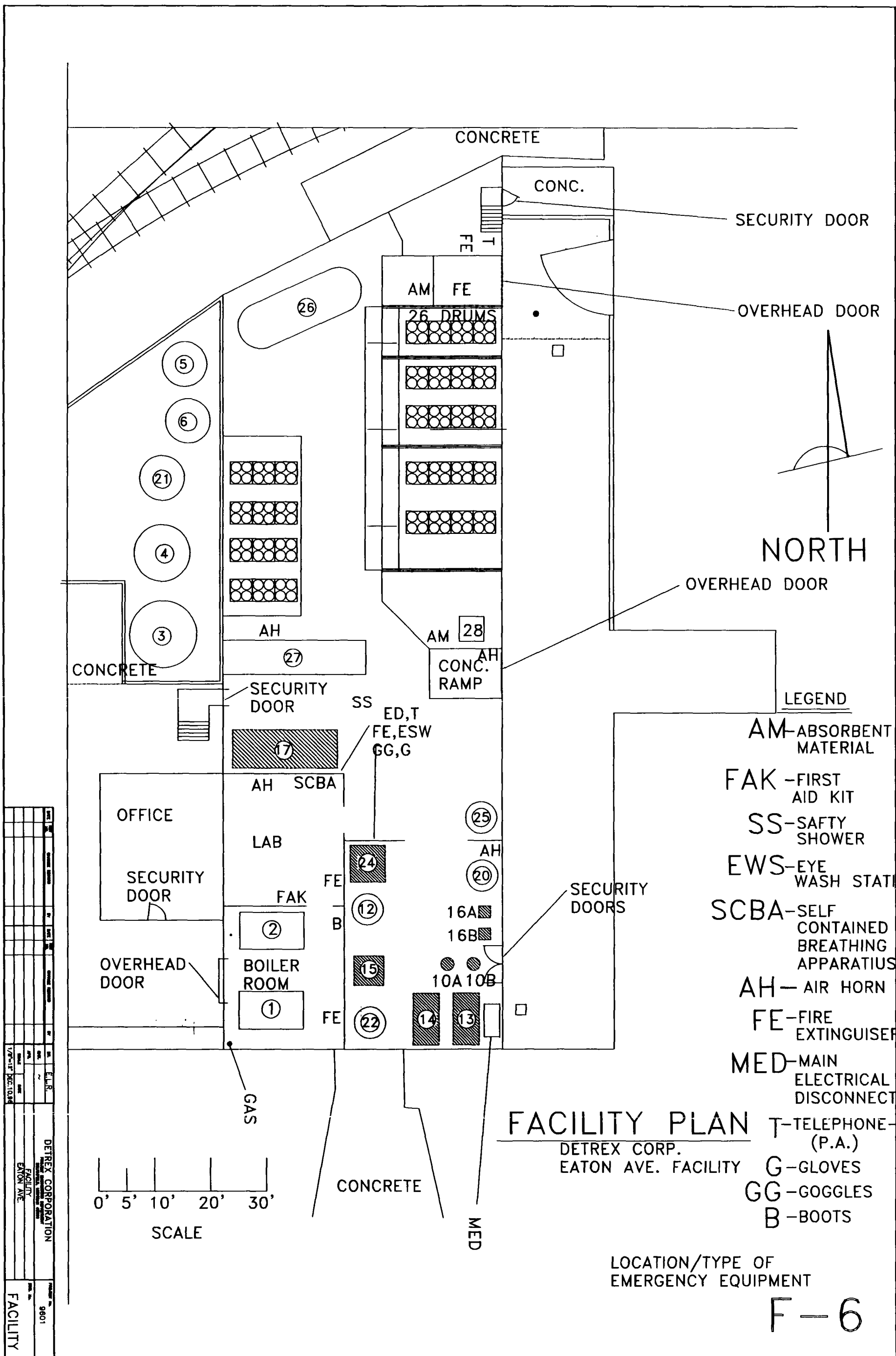
NOTE: REFER TO HAZARDOUS WASTE INSPECTION SCHEDULE FOR GREATER DETAILS ON TYPES OF PROBLEMS WHICH MAY BE ENCOUNTERED

HAZARDOUS WASTE INSPECTION SCHEDULE

<i>Items</i>	<i>Type of Problem</i>	<i>Inspection Frequency</i>
Loading/unloading area		
Sump Pump	- Operational - Available - Leaks	Weekly
Absorbent material	- Adequate supply	Weekly
Barriers to prevent entry		
Signs	- Present	Weekly
Fences	- Intact	Weekly
Personnel Protective Equipment (gloves, aprons, goggles, face shields)	- Adequate supply	Weekly
Respirator		
SCBA	- Loss of pressure in tank - Available	Weekly
Air Purifying	- Available and adequate supplies - Properly Stored	Weekly
Fire Protection-		
Extinguisher	- Available - Loss of pressure	Weekly
Eye wash station/ safety shower	- Functions - Scale or rust in water	Weekly
First Aid Kit	- Available - Adequate supplies	Weekly
Communication equipment		
Telephones	- Operational	Weekly
Intercom, 2-way radios	- Operational/available	Weekly
Emergency lighting	- Operational	Monthly
Decontamination Equipment	- Adequate supplies	Weekly

ATTACHMENT F-6

**LOCATION OF EMERGENCY AND
SAFETY EQUIPMENT**



ATTACHMENT F-7

**HAZARDOUS WASTES
COMPATIBILITY CHART**

ATTACHMENT F-6

EMERGENCY EQUIPMENT

1. Communications System

- telephone/public address system (notify in-house staff and external agencies)
- hand-held two-way radios (within facility and immediate area)

2. Fire Control Systems and Equipment

- fire extinguishers - for combustibles, flammables, liquids, and electrical fires;
- fire hydrants - 1 hydrant located approximately 50 feet out from the facility building

3. Spill Control Equipment

- absorbent material - approximately 5 gallons absorbed per bag
- drum pump
- brooms, shovels

4. Health and Medical Emergency Equipment/Supplies

- protective clothing (aprons, coveralls)
- respirators - air purifying for protection (below IDLH conditions) and escape
- self-contained breathing apparatus - 30 minute air supply
- emergency lighting (10 - 30 minutes lighting for escape)
- eye wash/safety shower - adequate supply of fresh water for flushing eyes and skin
- first-aid stations
- safety glasses
- gloves (cotton, leather, rubber)
- boots
- hard hats

5. Material Handling Equipment

- Lift Truck
- Drum Hand Truck

DETREX HAZARDOUS WASTE COMPATABILITY CHART

Date: 6/96
Revision: 96-1
Attachment: F-7

REACTIVITY GROUP

NUMBER

1	1							
2		2						
3		H,G	3					
10	H	H	H	10				
16		H,F			16			
17	H,GT	H,F,GT		H,GF		17		
19	H	H,F		H			19	
24	S	S	S	S				24

REACTIVITY CODE

CONSEQUENCES

H

HEAT

F

FIRE

G

INNOCUOUS AND NON-FLAMMABLE GAS GENERATION

GT

TOXIC GAS GENERATION

GF

FLAMMABLE GAS GENERATION

S

SOLUBILIZATION OF TOXIC SUBSTANCES

SECTION G

CONTINGENCY PLAN

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SECTION G

CONTINGENCY PLAN

[40 CFR 270.149(b)(7), 264.50 through 264.56, 264.52(b)]

This Contingency Plan has been prepared for the Detrex Corporation Facility (Facility) located in Detroit, Michigan. The Contingency Plan has been designed to minimize hazards to human health or the environment and describes the actions Facility personnel will take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents at the Facility.

The information is provided pursuant to Michigan Act 64 Rule 299.9607 which incorporates 40 CFR Part 264 Subpart D by reference. The applicable section(s) of the Federal Regulations (40 CFR) is referenced as appropriate.

G-1 GENERAL INFORMATION

This Contingency Plan has been provided for the Treatment Storage and Disposal Facility (TSDF) owned and operated by Detrex Corporation at the following location:

Detrex Corporation
12886 Eaton Avenue
Detroit, Michigan 48227
Telephone: (313) 491-4550

The Facility is classified as TSDF and operates under EPA identification number MID 091605972.

The hazardous waste management operations involve container storage; the Facility will also combine/commingle NON-RCRA and Non-hazardous wastes. Wastes will be received in DOT-approved containers and stored in appropriate storage areas to prevent combining or commingling of incompatible wastes in the event of a release.

The entire operation will be located within a single enclosed building. A Facility plan showing the location of the hazardous waste management units is provided in Attachment G-3.

This Contingency Plan contains emergency provisions to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents for the entire Facility. A copy of this Contingency Plan and all revisions will be maintained at the Facility.

G-2 EMERGENCY COORDINATORS **[40 CFR 264.52(D), 264.55]**

If an imminent or actual emergency is discovered, the Emergency Coordinator (either on the Facility premises or on call) will be immediately notified. The primary Emergency Coordinator (EC) will be contacted first; if he/she is not available, the alternate(s) will be contacted (in the order listed) until one is reached. A list of ECs with address and telephone numbers is provided in Attachment G-1 and will be posted in key areas of the Facility.

The employee who discovers an imminent or actual emergency shall take responsibility for notifying an EC. At least one of the designated ECs will either be at the Facility on call and available to respond to an emergency seven (7) days per week. They will be typically available to reach the Facility within approximately 30 minutes of being contacted. It is important to note that this Facility does not process or treat any wastes, therefore the potential for an emergency in a non-operational time is remote.

The EC and the alternates are thoroughly familiar with all aspects of the Contingency Plan, all operations and activities at the Facility, the location and characteristics of wastes handled, the locations of all records within the Facility, and the Facility layout. They have the authority to commit the resources necessary to implement the contingency plan. The EC or the alternate(s) will coordinate and direct all response efforts and personnel.

In the event that the Detroit Fire Department (DFD) responds to an emergency at the Facility, the DFD Supervisor assumes the duties and authorities of the Emergency Coordinator. The Supervisor and the EC then act together to coordinate and direct the response effort. The plant EC's principal authority is to effectively provide the DFD Supervisor with comprehensive and detailed information concerning plant operations and the location and characteristics of materials handled.

A listing of the emergency response agencies and organizations which may be called upon to provide emergency assistance at the Facility is provided in Attachment G-2 with the appropriate contact numbers.

The local Police, Fire Department and the local Hospital are familiar with, and have a copy of the most current Contingency Plan for the Facility (see Section G-6).

G-3 IMPLEMENTATION

[40 CFR 264.52(A), 264.56(D), 329 IAC 3.1-9-2(3)]

The provisions of this Contingency Plan must be carried out immediately whenever there is an imminent or actual incident, such as fire, explosion, or release of hazardous waste or hazardous waste constituents which could adversely affect human health or the environment. Minor leaks or spills in the hazardous waste storage areas (i.e., small quantity within a containment area that can easily be managed and cleaned by the personnel and equipment at hand) would not normally trigger the formal implementation of the Contingency Plan but would be managed by the EC or the alternate(s). Leaks or spills will only trigger formal implementation of the Contingency Plan, should the EC determine that such leaks or spills represent an imminent or actual threat to human health or the environment. It is noted that the methods addressed in the Contingency Plan and the personnel training conducted for contingency procedures are applicable to any potential minor leak or spill. Also, a fire in the incipient stage will not normally trigger the formal implementation of the Contingency Plan since Facility Personnel have been trained in a fire extinguisher program, as defined under OSHA 1910 Subpart L. An incipient fire is defined as a fire which can be extinguished with approximately two 20-pound fire extinguishers. Fires in the incipient stage will only trigger implementation of the Contingency Plan should the EC determine that such fires represent an imminent or actual threat to human health or the environment.

The following section offers the EC guidelines to evaluate the implementation of the Contingency Plan.

The Contingency Plan will be implemented in the following situations:

A. Fire and/or Explosion

1. A fire caused the release of toxic fumes (based on G-4c);
2. The fire spreads and could possibly ignite materials or other locations on site or could cause heat-induced explosions;
3. The fire could possibly spread to off-site areas;
4. Contaminant could spread from the use of water or water and chemical fire suppressants external to the Facility; or
5. An explosion has occurred or an imminent danger exists that an explosion could occur at the Facility.

B. Spill or Material Release

1. The spill could result in the release of toxic liquids or vapors, thus causing a fire or gas explosion hazard or health hazard; or
2. The spill is major and could result in soil contamination and/or groundwater pollution.

If the Emergency Coordinator determines that the Facility has had a release, fire, or explosion which could threaten human health or the environment outside the boundaries of the facilities, he/she will report his/her finding as follows:

1. If his/her assessment of the emergency indicates that evacuation of the surrounding local areas may be advisable, the EC will immediately notify the DFD at 911 and any other appropriate authorities as deemed necessary including the National Response Center.
2. Immediately contact all other appropriate departments, agencies and organizations with designated response orders to relate to them the specific information they require to respond (see Section G-4a).
3. Contact Detrex Risk Management Group.

G-4 EMERGENCY ACTIONS
[40 CFR 264.56]

In the event of an emergency, the Emergency Coordinator or his/her alternate be contacted immediately and will:

1. Determine whether to formally implement the Contingency Plan based upon the criteria set forth in Section G-3 (i.e. potential threat to human health or the environment).
2. Immediately warn facility Personnel and appropriate emergency response authorities if it is an imminent or actual emergency, involving sudden or non-sudden release by fire, explosion, or otherwise so as to threaten human health or the environment. The procedures listed below with regard to appropriate notification of the proper authorities shall be followed as soon as possible once the safety of personnel is assured.
3. Determine the origin, location, nature, and extent of the problem.
4. Establish a command post from which to coordinate and direct the overall emergency response effort.
5. Inform other personnel of the situation.

G-4a NOTIFICATION
[40 CFR 264.56(A)]

1. Once immediate concerns involving human health and the environment have been addressed by the emergency response personnel the EC will notify, within 24 hours, the appropriate national, state, and/or local departments, agencies and organizations with designated response roles, including the Risk Management Department of Detrex Corporation (see Table G-2).
2. When notifying response teams, the EC will furnish the following information:
 - a. Name and telephone number of reporter;
 - b. Name and address of Facility;
 - c. Time and type (e.g., release, fire) of incident;
 - d. Name and quantity of material(s) involved and to what extent;
 - e. The extent of injuries, if any; and
 - f. The possible, hazards to human health or the environment outside of the Facility.

G-4b IDENTIFICATION OF HAZARDS MATERIALS
[40 CFR 264.56(B)]

In the event of an emergency situation, the EC or his/her alternate will be contacted immediately. Upon notification, the EC will take the necessary steps to immediately identify the character, exact source, amount and aerial extent of any released materials.

The EC and the alternate(s) are familiar with the characteristics of all hazardous wastes handled at the Facility and have access to the appropriate waste characterization information kept on file in the office. They also have access to the Operating Record which contains up-to-date information on the inventory of hazardous wastes at the Facility.

Based upon the EC's knowledge of the types and locations of all hazardous wastes at the Facility, and on a thorough visual inspection of the situation, an accurate identification of the hazardous materials existing in an emergency situation will be possible.

G-4c ASSESSMENT

[40 CFR 264.56(C), 264.56(D), 329 IAC 3.1-9-2(3)]

Upon discovery or notification of an emergency situation, the EC will assess possible hazards to human health or the environment that may have resulted from the release, fire or explosion. This assessment shall consider both direct and indirect effects of the release, fire, or explosion, including the effects of any toxic, irritating, or asphyxiating gases that were generated, or the effects of any hazardous surface water runoff from water or chemical agents used to control fire and heat-induced explosions.

The procedure for assessing possible hazards includes:

1. Identification of hazardous properties of the materials involved or by-products thereof.
2. Determination of threat to human health or the environment, both on site and off site.
3. Assessment of any environmental conditions (e.g., windspeed and direction) that may contribute to the magnitude of the hazard.
4. Determination of the readiness and availability of response equipment, both on-site and off-site.

Specific Assessment of Possible Hazards to Human Health or the Environment

Although each potential threat to human health or the environment will be evaluated/assessed by the EC or alternate(s) on a case-by-case basis, the following scenarios have been developed by the Risk Management Group to provide general guidance to the EC or the alternate(s). These and other possible scenarios may be discussed during training. In the event a situation occurs that is not covered in one of these scenarios, and the EC or alternate(s)

are not absolutely sure of appropriate protective steps, the EC or alternates are directed to error on the conservative side and implement the Contingency Plan.

1. Emergencies which result in a spill or release of hazardous material which cannot be controlled by plant employees but will be contained by the secondary containment system shall not be deemed a hazard to human health or the environment.
2. Emergencies which result in the release of gasses which cannot be controlled by the employees but can be contained by the building, to the extent that the amount escaping to the surrounding areas are below hazardous levels, then the release will not be considered a threat to the environment, but may be considered a threat to human health only for those responding to the incident.
3. Emergencies which result in a liquid spill or release of hazardous material which cannot be controlled by plant employees or the secondary containment system but does not reach storm drains, ponds, creeks, rivers or other bodies of water which are used for irrigation of food crops or can otherwise enter aquifers or reservoirs which are used for human consumption shall be considered a hazard to the environment but not necessarily to human health.
4. Emergencies which satisfy the criteria in 3 above and may possibly reach storm drains, ponds, creeks, rivers or other bodies of water which are used for irrigation of food crops or can otherwise enter aquifers or reservoirs which in turn are used for human consumption shall be considered a hazard to the environment and to human health.
5. In the event that a major gaseous release escapes the boundaries of the Facility or if the material has a flash point of less than 100° F (i.e., flammable liquid) and may create an explosion/fire, the release will be considered a threat to human health and the environment.

If the EC or alternate(s) determines that the release, fire, or explosion could threaten human health or the environment outside the boundaries of the Facility, the EC will proceed with the notification procedures detailed in Section G-4a of this Contingency Plan.

The EC or alternate(s) will evaluate information regarding the following:

1. The quantity of material released (from visual observations and Facility records);
2. The characteristics of the material (including physical and chemical properties, toxicity information from reference sources such as the handbooks for chemical substance from NIOSH or ACGIH, etc.); and
3. The potential for employee exposure (such as the generation of vapor/mists or dermal contact).

This information will be used to determine if there is a need to evacuate personnel from the Facility. Once the concern for the safety of Facility Personnel is taken into account, the Emergency Coordinator or alternate will use the above information, along with such items as the zoning map, the wind rose, and sewer location maps found in Attachments B-2 through B-4 to determine if there could be a threat to human health and/or the environment outside of the Facility. If a concern does exist, the local emergency response agencies will be contacted. The local agencies will then determine if a need for evacuation does indeed exist.

G-4d CONTROL PROCEDURES
[40 CFR 264.52(A)]

Potential accidents are classified into three general areas:

1. Fire and/or explosion involving hazardous waste or hazardous waste constituents.
2. Accidental release in a liquid form of hazardous waste or hazardous waste constituents.
3. Accidental release in the form of a vapor of hazardous waste or hazardous waste constituents.

G-4d(1) Fire and/or Explosion

The hazardous waste management containment areas are accessible to fire-fighting and other emergency equipment. Response procedures in the event of a fire and/or explosion will be as follows:

1. Facility Personnel will notify the office via two-way radio or other communication methods (example, verbal);
2. The EC will be notified;
3. If a fire is minor (i.e. in incipient stage), Facility fire-fighting equipment such as a fire extinguisher will be used to extinguish the fire. Location and type of fire extinguishers at the Facility are shown in Attachment G-4;
4. In the event that Step 3 fails to control the fire, Steps 5, 6 and 7 will be implemented and all employees will immediately vacate the premise. Personnel will meet and be accounted for at primary or alternate meeting areas.
5. If a fire and/or explosion is major, the DFD will be contacted at 911, as well as other authorities as deemed necessary.

6. Any operating units, such as boilers, pumps, etc., would be shut down as expeditiously as possible. The type of equipment the facility operates is such that an emergency shut down will not create a potential for problems.
7. If time permits, and employees will not be placed into danger, power from the main disconnects will be shut down (locations shown on Attachment G-4).
8. The EC has the authority to direct other necessary actions as required.
9. An "all clear" signal will be given when the fire and/or explosion has been extinguished and the personnel's safety is no longer endangered.
10. After a fire and/or explosion has been extinguished, cleanup procedures will commence. All emergency equipment used must be replaced, repaired, recharged or otherwise be in good operating condition and placed in the appropriate location before normal operations resume.

G-4d(2) Accidental Release, Liquid

If an accidental release of liquid occurs which cannot be controlled with absorbent material, the following steps will be taken:

1. Facility Personnel will notify the office via telephone or other communication methods.
2. The EC will be notified. Appropriate Emergency Response Agencies (i.e., Emergency Spill Cleanup) as listed in Attachment G-2, will be notified as deemed necessary.
3. The exact source and type of release of hazardous waste or hazardous waste constituents will be determined.
4. All pump(s) contributing to the release will be shut off.
5. Any section(s) of pipe contributing to the release will be isolated by closing the appropriate valve(s).
6. If the discharge is from a container, the container will be turned, if possible, to orient the leak toward the top if it will reduce or stop the discharge until such a time as the drum can be properly overpacked.
7. The procedures to follow in the event of a detection of a leak from a tank are as follows.

- a. Notify the EC immediately.
 - b. Implement remedial action in an attempt to stop the leak at the source (e.g., tighten the valve packing gland if the leak is emanating from the pump).
 - c. Take appropriate measures to transfer the hazardous waste from one DOT-approved containers to another DOT approved container, or to a tank truck.
 - d. Note the leak in the Inspection Report.
8. A temporary dike of absorbent material will be placed around the discharge area.
 9. All doors to the outside will be opened if the vapor(s) associated with the release are minor in nature as found in G-4d(3).
 10. If there is a major release of product which may endanger human health, plant personnel will be evacuated from the building. Personnel will meet and be accounted for at the primary or alternate meeting area.
 11. Clean-up procedures will be implemented which may include notification of a spill clean-up firm, furnishing the clean-up crew with physical and/or chemical properties of waste and amount of waste released.
 - a. Clean-up of released waste: The waste will be collected via use of absorbent material or other methods for small spills. The contaminated material will then be placed in DOT-approved containers, and processed or transported off site for treatment/disposal at permitted facilities. For large spills, the waste will be collected with a pump and placed in DOT-approved containers or hazardous waste tanks for reclamation or disposal. Only explosion-proof electrical equipment will be used in the event the material is assessed as being combustible or flammable. The balance of the spilled material will be cleaned with absorbent material or other methods as stated above.
 - b. Decontamination: Following cleanup, the affected area of the secondary containment area will be swept and all sweepings will be drummed. The area will subsequently be decontaminated by a triple steam cleaning process, scrubbing with hot water and/or sand blasting may be required if the triple rinsing is determined to be insufficient. Proper decontamination of an impacted area will be verified by the collection of water sample after the triple rinse process. The sample will be analyzed for the constituents present in the released material and the results compared to the appropriate Federal and State Drinking Water Standards.

Waste sand generated in the event that sand blasting is utilized will be properly containerized, sampled, analyzed, characterized and disposed of in accordance

with statutory requirements of jurisdiction; i.e., if the sand is non-RCRA material, it can be disposed of in a Class II Landfill.

If hazardous, it must be shipped to an off-site permitted TSDF. Any wash waters generated will be collected in DOT containers and processed, or transported off site for treatment/disposal at permitted facilities, if testing indicates it is a RCRA waste.

- c. Cleanup of Contaminated Soil: Should the spill or release occur outside the secondary containment area (i.e., external to the building), cleanup will be accomplished by a group specializing in such procedures. All visually contaminated soils, where practical, will be excavated and disposed as appropriate, at a permitted hazardous waste facility. Any excavations may be restricted by building foundations. In the event an excavation is restricted by a building foundation, Detrex will work with MDEQ to determine an appropriate response.

- 12. Emergency equipment used will be decontaminated, replaced, repaired, recharged or otherwise be in good operating conditions and placed in the appropriate location before operations resume.

G-4d(3) Accidental Release Vapor

- 1. Facility Personnel will notify the office via two-way radio or other communication methods;
- 2. The EC or one of the alternate(s) will be notified;
- 3. The exact source and type of released hazardous waste or hazardous waste constituent will be determined, if possible, by using Facility records and operator knowledge;
- 4. All doors to the outside will be opened, if the release is minor in nature;
- 5. If the release is major (could cause a fire/explosion outside the Facility, or could affect human health), the local fire department will be contacted. Any operating units such as boilers, air conditioning or heating systems, pumps, etc. will be shut down as expeditiously as possible. Personnel will be evacuated from the building and will meet at the primary or alternate meeting area to be accounted for. Appropriate Emergency Response Agencies as listed in Attachment G-2 will be notified as deemed necessary; and
- 6. Clean up procedures will be initiated.

G-4e PREVENTION OF RECURRENCE OR SPREAD OF FIRES, EXPLOSIONS OR RELEASES
[40 CFR 264.56(E)]

Actions to prevent the recurrence or spread of fires, explosions or releases may include:

1. Halt operations and continue to monitor the Facility hourly, if possible, until assured that no problems may develop due to the emergency shut down.
2. Any containers contributing to a release will be emptied or otherwise be removed. Any product tanks contributing to a release will be removed from service until repaired.
3. Collecting and containing released wastes.
4. Use non-sparking tools and use bonding/grounding as appropriate.
5. Protecting the area from open flame or heat generating activities.
6. Upgrading daily and weekly inspection forms, if necessary.

All reasonable safety procedures will be followed prior to resuming operations.

G-4f STORAGE AND TREATMENT OF RELEASED MATERIAL
[40 CFR 264.56(G)]

Immediately after an emergency, the EC will make arrangements for proper treatment, storage and/or disposal of all water and contaminated materials resulting from the release, fire or explosion. In the event that equipment is needed to help contain, collect, store, and treat the released wastes, the EC, or the alternate will:

1. evaluate the type and quantity of material(s) released;
2. determine if the necessary equipment is in-house to properly respond;
3. contact outside agencies, such as those in Appendix G-2 to provide assistance and equipment;
4. transfer material to empty DOT-approved container(s) (an on-site supply is available) or to a storage tank which is either empty or contains compatible material;
5. if necessary, a bulk transport unit may also be utilized for temporary storage; and
6. characterize and dispose of the wastes at a properly permitted facility.

Care shall be taken to consider potential waste incompatibilities (see Section F-5) when handling released material.

All resulting wastes generated will be considered a RCRA hazardous waste consistent with the characteristics of wastes present within the Facility at the time of the emergency. The wastes will be managed as a RCRA waste unless it can be demonstrated to be non-regulated.

G-4g INCOMPATIBLE WASTES
[40 CFR 264.56(H)(1)]

Operational procedures to prevent the storage of incompatible wastes in the same container storage area are documented in Section F. It is noted that water reactive wastes are not accepted at the Facility, therefore any water from cleaning or potential fire fighting activities will not create a compatibility problem in any area.

In the event of a release of hazardous waste into a container storage area, no additional wastes may be placed in that containment area until the release is cleaned up.

G-4h POST-EMERGENCY EQUIPMENT MAINTENANCE
[40 CFR 264.56(H)(2)]

After an emergency event, or as required during the emergency response, all emergency equipment utilized in the affected area will be decontaminated or replaced so that it is suitable for future use. Prior to resuming operations, an inspection of all utilized safety equipment will be conducted. All proper authorities will be notified that the post-emergency equipment maintenance has been performed and operations will resume.

G-4i CONTAINER SPILLS AND LEAKAGE
[40 CFR 264.52, 264.171]

Any container identified to have a leak will be removed from service. If any contents remain in the container, the contents will be pumped out to another container or placed in an overpack container. The container will then be managed in accordance with 40 CFR 261.7. Any released waste will be cleaned up within 24 hours of discovery.

G-4j TANK SPILLS AND LEAKAGE

G-4j(1) Stopping Waste Addition
[40 CFR 264.196(a)]

This Facility no longer processes hazardous waste or stores hazardous wastes in storage tanks, as such this section no longer applies.

G-4j(2) Removing Waste
[40 CFR 264.196(b)]

This Facility no longer processes hazardous waste or stores hazardous wastes in storage tanks, as such this section no longer applies.

G-4j(3) Containment of Visible Releases
[40 CFR 264.196(c)]

This Facility no longer processes hazardous waste or stores hazardous wastes in storage tanks, as such this section no longer applies.

G-4j(4) Notifications, Reports
[40 CFR 264.196(d)]

This Facility no longer processes hazardous waste or stores hazardous wastes in storage tanks, as such this section no longer applies.

G-4j(5) Provision of Secondary Containment, Repair, or Closure
[40 CFR 264.196(e)]

This Facility no longer processes hazardous waste or stores hazardous wastes in storage tanks, as such this section no longer applies. Detrex has submitted a closure plan for these units.

G-4k SURFACE IMPOUNDMENT SPILLS AND LEAKAGE
[40 CFR 264.227]

This section not applicable to the Facility.

G-4l CONTAINMENT BUILDING LEAKS
[40 CFR 264.1101(C)(3)]

This section not applicable to the Facility.

G-5 EMERGENCY EQUIPMENT

[40 CFR 264.52(E)]

The type and physical location of Facility's emergency equipment, including fire equipment, spill control equipment, breathing apparatus and medical treatment facilities is shown in Attachment G-4. A brief description of each aspect of the Emergency Equipment is also found in Attachment G-4.

G-6 COORDINATION AGREEMENTS

[40 CFR 264.52(C), 264.37]

To familiarize police, fire department and hospital officials with: the layout of the Facility, properties of the hazardous wastes handled at the Facility and their associated hazards, the entrances to the Facility, possible evacuation routes, and other aspects of the Facility, copies of the Contingency Plan have been submitted to the DFD, the hospital and Emergency Spill Response company (companies) that may be utilized in an emergency (see Attachment G-2.).

Each person, or the chief officer of each department, agency, or organization which receives a copy of the Contingency Plan is asked to sign a Coordination Agreement form to acknowledge that he/she reviewed the plan, understood the department's, agency's or organization's role under the plan, and that all members of the department, agency, or organization will be informed of the plan's content and their individual responsibilities. The copy of the Contingency Plan and the request for signed acknowledgment is sent by certified mail to each organization. The certified mail receipts and returned signed acknowledgments, where available, are kept in the Facility office.

A copy of this contingency plan has been forwarded to the appropriate agencies and acknowledgment agreements, where available, have been included in Attachment G-6.

G-7 EVACUATION PLAN

[40 CFR 264.52(F)]

If an emergency occurs which cannot be adequately responded to by Facility Personnel, the Emergency Coordinator will signal employees to evacuate the Facility. This may be done by the intercom system, 2-way radio or by direct verbal communication. Employees will exit the Facility by the most expeditious route. Provided in Attachment G-5 is a revised Facility Plan showing evacuation routes. It is noted that the Facility is small so verbal communication will be helpful in directing evacuation. Due to the small size of the Facility, the announcement of an emergency will be accomplished by voice communication, two-way radios, intercom, or some other device such as an air horn. When the intercom is used, the EC or alternate will make an announcement similar to the one below at least three times.

ATTENTION! ATTENTION! REPORT TO THE PRIMARY/ SECONDARY DESIGNATED AREA AS THERE IS A FIRE/SPILL/EXPLOSION/ETC. IN THE [AFFECTED AREA IF APPLICABLE].

Once outside the building, employees will assemble at the primary or alternate meeting area or other designated area. The EC or the alternate will then notify the proper emergency response teams. The EC, based on this assessment, may deviate from established procedures in order to effectively and safely respond to emergency situations.

G-8 REQUIRED REPORTS

[40 CFR 264.56(J), 329 IAC 3.1-9-2(4)]

As required, any emergency event requiring implementation of the Contingency Plan will be reported in writing to the appropriate federal and state regulatory Regional Administrator(s) within fifteen (15) days of the event. This report will, at minimum, contain:

1. Name, address, and telephone number of the owner or operator;
2. Name, address, and telephone number of the Facility;
3. Date, time, and type of incident (i.e., fire, explosion);
4. Name and quantity of materials involved;
5. The extent of injuries, if any;
6. The assessment of actual or potential hazards to human health or the environment, where this is applicable; and
7. Estimated quantity and disposition of recovered material that resulted from the incident.

The Risk Management Department of Detrex Corporation will submit and retain on file reports to the appropriate agencies and all applicable information relevant to the event for which the Contingency Plan was implemented.

The Risk Management Department of Detrex will also inform the appropriate departments, agencies, and authorities that cleanup is complete before operations at the Facility resume.

Detrex will place in the operating record all reports of any incident that requires implementing the Contingency Plan.

G-9 AMENDMENTS TO THE CONTINGENCY PLAN

[40 CFR 264.54]

The Contingency Plan will be reviewed and immediately amended, if necessary, whenever:

1. the Facility permit is revised;
2. the plan fails in an emergency;
3. the list of emergency coordinators changes;
4. the list of emergency equipment changes;
5. the Facility alters its design, construction, operation, maintenance, or other circumstances in a way materially increasing the potential for fires, explosions or releases of hazardous waste/or hazardous waste constituents;
6. the actions/responses necessary to comply in an emergency situation change; or
7. if required due to changes in the regulations.

All changes in this plan will be sent to every person, agency, department and organization on the contingency plan distribution list within 30 days of the effective date of the change.

ATTACHMENT G-1

EMERGENCY COORDINATORS

**ATTACHMENT G-1
EMERGENCY COORDINATORS**

NAME	JOB TITLE	WORK PHONE	HOME PHONE	HOME ADDRESS
<u>Primary</u> Ronald Hritzkowin	Operations Manager	(313) 491-4550	(810) 354-0930	23589 Lasher Southfield MI 48034
Alternate(s)				
Levi Douglass	Warehouse Mgr.	(313) 491-4550	(313) 863-0586	18615 Muirland Detroit MI 48221
Jim Goodrich	QC Mgr.	(313) 491-4550	(810) 628-0321	3904 Ludwig Rd. Oxford MI 48317

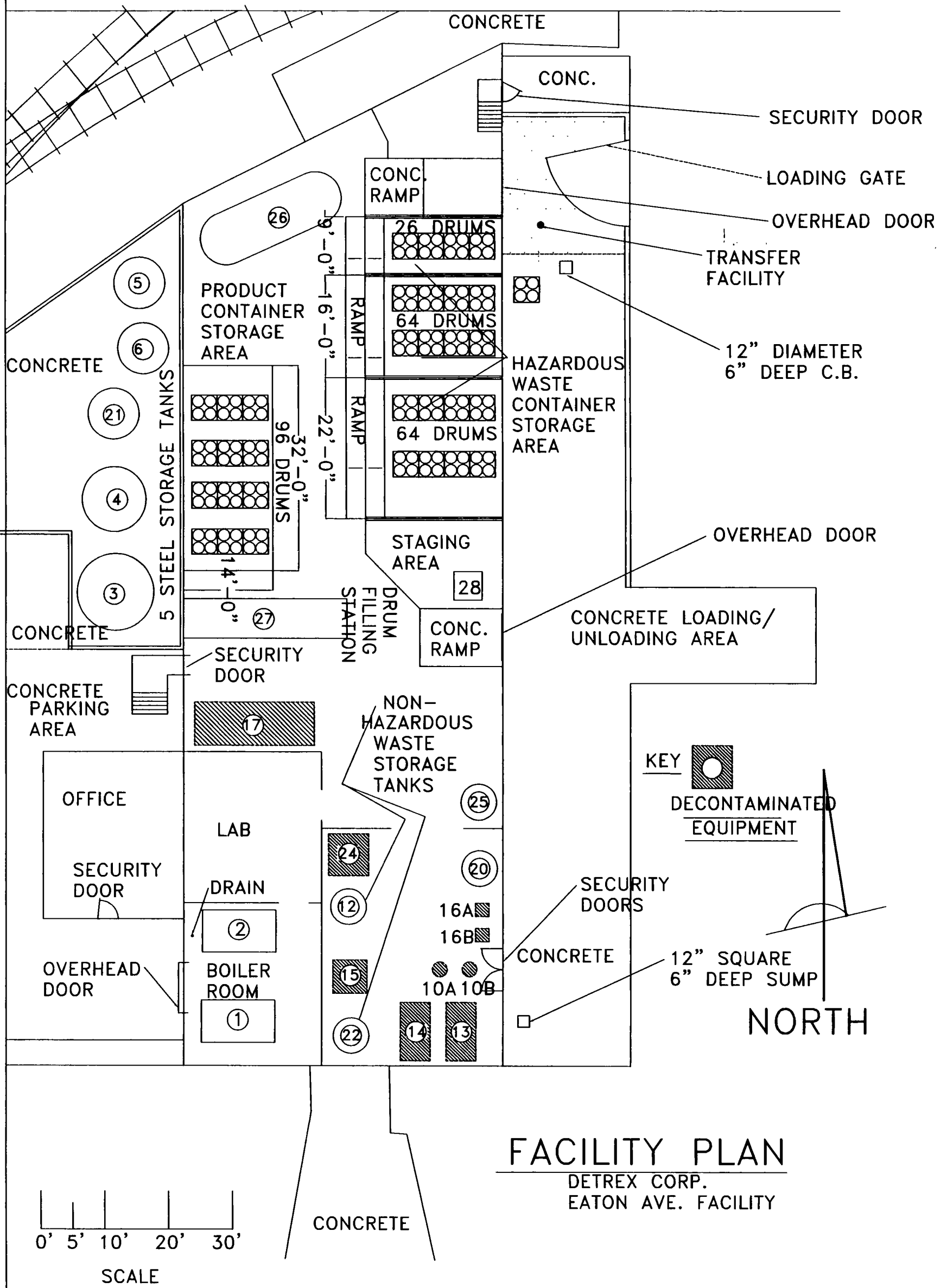
ATTACHMENT G-2

**EMERGENCY RESPONSE
AGENCIES / AUTHORITIES**

ATTACHMENT G-3

FACILITY PLAN

DATE	1/8/85	BY	W.E.	CHKD	W.E.	PROJECT	DETREX CORP. EATON AVE. FACILITY	PROJECT NO.	9601
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ATTACHMENT G-4

**LOCATION OF EMERGENCY AND
SAFETY EQUIPMENT**

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Attachment G4

EMERGENCY EQUIPMENT

1. Communications System

- telephone/public address system (notify in-house staff and external agencies)
- hand-held two-way radios (within facility and immediate area)

2. Fire Control Systems and Equipment

- fire extinguishers - for combustibles, flammables, liquids, and electrical fires;
- fire hydrants - 1 hydrant located approximately 50 feet out from the facility building

3. Spill Control Equipment

- absorbent material - approximately 5 gallons absorbed per bag
- drum pump
- brooms, shovels

4. Health and Medical Emergency Equipment/Supplies

- protective clothing (aprons, coveralls)
- respirators - air purifying for protection (below IDLH conditions) and escape
- self-contained breathing apparatus - 30 minute air supply
- emergency lighting (10 - 30 minutes lighting for escape)
- eye wash/safety shower - adequate supply of fresh water for flushing eyes and skin
- first-aid stations
- safety glasses
- gloves (cotton, leather, rubber)
- boots
- hard hats

5. Material Handling Equipment

- Lift Truck
- Drum Hand Truck

ATTACHMENT G-5

**EVACUATION ROUTES & PRIMARY
AND ALTERNATE MEETING AREAS**

December 16, 1996

x x , title

x

x

Re:

Contingency Plan.

Detrex Corporation

12886 Eaton Av.

Detroit MI 48227

Dear , title :

Detrex Corporation has updated its Contingency Plan. As part of this process, all Emergency Responders and Organizations listed in Detrex's Contingency Plan is being provided an updated copy.

In order to verify your receipt of the Plan, please sign the attached Acknowledgment Form and return it in the enclosed envelope. Should you have any questions regarding the revised Contingency Plan, please feel free to contact me or Mr. Stan Miles at (317) 241-9379.

Sincerely,

David Craig - CHMM, CET

Manager of Environmental and Safety Compliance

cc:

MDEQ, Hazardous Waste Section

Facility

File

**HAZARDOUS WASTE TSDF CONTINGENCY PLAN
ACKNOWLEDGEMENT FORM**

I, x x of x acknowledge receipt of Detrex Corporation's Contingency Plan Dated November 7, 1996. I have reviewed the document and understand Detrex's need for my company as an Emergency Responder/Organization in the event that such services are needed. I further acknowledge that this Plan has been reviewed with key response personnel in my company and that the document is being maintained on file for future reference.

Signature of Emergency Responder

Print Name and Title

Date

David Craig, CHMM, CET
Mgr. Environmental & Safety Compliance

Date

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ATTACHMENT G-6

**COORDINATION AGREEMENT
ACKNOWLEDGMENTS**

SECTION H

PERSONNEL TRAINING

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SECTION H

PERSONNEL TRAINING

[40 CFR 270.14(b)(12), 264.16]

This section outlines the personnel training program completed by all employees of the Detrex Corporations Facility (Facility) located in Detroit, Michigan. The information is provided pursuant to Michigan Act 64 Rule 299.9504(1)(c) which incorporates 40 CFR 270.14(b)(12) and 264.16 by reference. The applicable section(s) of the State and Federal Regulations are referenced as appropriate.

H-1 OUTLINE OF THE TRAINING PROGRAM

[40 CFR 264.16(A)(1)]

Detrex Corporation has developed a personnel training program for training employees in the safe handling of the hazardous wastes received at the Facility. As of 1994 Detrex Corporation expanded its Corporate compliance training program to include all operations at the Detroit TSDF. This corporate compliance program incorporates the existing Facility training program with expanded coverage of relevant subject areas including training required to comply with appropriate requirements of DOT, OSHA and EPA. The training consists of study, on-the-job training and competence evaluation. Each employee must successfully complete the full training program before working unsupervised in the Facility. This occurs within 6 months of being hired or being transferred to a new position at the Facility. The training program provides each employee with a firm knowledge of how to handle the hazardous wastes and also how to react, in the event of an emergency situation, to protect human health and the environment.

H-1a JOB TITLES/JOB DESCRIPTIONS

[40 CFR 264.16(D)(1), 264.16(D)(2)]

Detrex Corporation maintains the following documents and records at the Facility:

- 1) The job title, experience requirements, and job descriptions for each position related to Hazardous Waste Management activities at this Facility are provided in Attachment H-1. A list of personnel currently filling these positions is available at the Facility.
- 2) A written description of the type and amount of both introductory and continuing training given to personnel for each position related to hazardous waste management.
- 3) Records certified by the Training Director, that document the training has been completed by Facility Personnel.

Detrex Corporation maintains training records of former employees involved with hazardous waste management for 3 (three) years from the date they last worked at the Facility and will maintain training records on current personnel until closure of the Facility.

Each employee receives the training necessary for him/her to perform his/her required job functions. For example, operators may receive training in such responsibilities as Emergency Action and Contingency plans, fire protection, lockout/tagout, confined space entry, and lift truck operations. The Emergency Coordinator and alternate receive training under the Emergency Action and Contingency Plans. These individuals are also familiar with operations at this Facility,

and are able to provide information to emergency responders as well as helping direct responses to emergencies.

H-1b TRAINING CONTENT, FREQUENCY, AND TECHNIQUES [40 CFR 264.16(C) AND (D)(3)]

The program was developed by Detrex Corporation for training employees in the safe handling of hazardous wastes includes study, on-the-job training, and competence evaluation. Provisions are made for updating or revising the training program as necessary to ensure compliance with regulatory guidelines, changing Facility conditions, and organizational changes. As new waste groups are approved by MDEQ, the Training Director will ensure the appropriate personnel are aware of potential incompatibilities pursuant to Section F-5.

An outline of Detrex's Corporate compliance training program, is provided in Attachment H-2. This outlines all aspects of the training program, providing each employee with the information required for the safe execution of his or her responsibilities.

An employee is not allowed to work unsupervised prior to completing introductory training. In addition, a refresher training program is conducted by Detrex Corporation once each calendar year for all facility Employees.

H-1 c TRAINING DIRECTOR [40 CFR 264.16(a)(2)]

Mr. David Craig has been appointed Corporate Training Director for Detrex Corporation. In this role Mr. Craig and his staff will be responsible for updating the existing personnel training program and ensuring all employees involved in hazardous waste management activities receive adequate training. As necessary, qualified independent persons or organizations may be contracted by the Training Director to assist in the training program. Mr. Craig himself has received formal training as described in his curriculum vitae enclosed as Attachment H-3. Additionally, the Training Director and/or his staff attend various meetings/seminars as part of Detrex Corporation's Risk Management Team. The purpose of these is to help keep the Training Director and his staff as current as possible on changing regulations that will affect operations.

H-1 d RELEVANCE OF TRAINING TO JOB POSITION [40 CFR 264.16(a)(2)]

Contents of the training program is tailored to each position. An outline of Detrex's Corporate compliance training program is provided in Attachment H-2.

For Example:

The Facility Manager receives training in areas such as the Operation, Inspection and Recordkeeping for: Safety Equipment, Transportation and Material Handling Equipment and Contingency Plan Procedures. The Facility Manager will also ensure that proper response is given to any deficiencies identified during inspections (e.g. repair or replace defective equipment).

The Office Coordinator receives training in areas such record keeping, the manifesting of hazardous waste shipments, inventory, and appropriate components of the Contingency Plan.

The Facility Operator receives training in areas such the operation of: Safety Equipment, Emergency Equipment, and Forklift or other material handling equipment operation, the operation of the treatment systems, and appropriate components of the Contingency Plan.

Truck Driver/Facility Operators receive training in areas such the operation of: Safety Equipment, Emergency Equipment, Material Handling Equipment and all DOT requirements related to transportation of hazardous materials.

All employees, whose job is directly related to the handling of Hazardous Waste, receive training in the proper use of personnel protective equipment including direction on when the equipment is to be worn. These employees are also trained to respond to emergency procedures by being familiar with the Contingency Plan. Facility Personnel that are required to wear respirators or may use the self-contained breathing apparatus (SCBA) participate in a medical monitoring program as required by 29 CFR 1910.

H-1e TRAINING FOR EMERGENCY RESPONSE [40 CFR 264.16(a)(3)]

This training program is designed to ensure that personnel not only handle hazardous wastes in a safe manner, but also properly respond to emergency situations. The program trains hazardous waste handling/management personnel to maintain compliance under both normal operating conditions and emergency conditions.

As noted above, each employee receives training in areas which are specific to their jobs.

Emergency response procedures, as described in detail in Section G-4 of this permit application, consist of a number of steps.

- 1) Warn all Facility Personnel of emergency situations.

- 2) Notification of appropriate state or local agencies with designated response roles if necessary.
- 3) Identification of nature and source of released material and assessment of potential hazards to human health or the environment.
- 4) Proper use of personnel protective equipment.
- 5) Implementation of appropriate control procedure(s) based on type of accident to reduce potential for environmental impact (i.e. release outside of containment structures).
- 6) Procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment.
- 7) Procedures to respond to a fire.
- 8) Procedures to respond to potential groundwater contamination incidents.
- 9) Cleanup of affected area and emergency equipment.
- 10) Storage and disposal of released material.

The training plan implemented by Detrex Corporation involves study and on-the-job training in the proper emergency response procedures and the proper use of all personnel protective equipment outlined above and described in more detail in Section G-4 of this permit application.

H-2 IMPLEMENTATION OF TRAINING PROGRAM

[40 CFR 264.16(b), (d)(4) and (e)]

An employee is hired to fill a specific position (i.e. Warehouseman). The employee is first required to review the written training program for the position he/she is to fill. Upon completion, the employee is then given at least 40 hours of on-the-job training within 6 months of hiring.

No employee hired to work at the Facility, or transferred from one position to another which requires skills he/she does not possess, will be allowed to work unsupervised at the Facility prior to the completion of the training program.

Employees are required to meet annually for reviews and updates of this training program and to discuss and study the following subjects:

1. All hazardous wastes currently being handled at the Facility, noting any changes in waste type, volume, source, characteristics, or location that have occurred during the past year;
2. The status of operating conditions and procedures noting any areas where there are problems or potential for problems. Employees participate in developing effective solutions;
3. The requirements contained in the Facility's operating permit, noting any changes that have occurred during the past year. Areas where maintenance or compliance is a problem are identified and discussed, and effective solutions are sought; and
4. Incidents that have occurred in the past year that warranted use of contingency plans and/or emergency action. This review focuses on the cause of the incident and identification of steps to be taken to prevent or to ensure better handling of such events in the future.

Records certified by the Training Director documenting that the required training to ensure that employees can perform their duties in such a manner that compliance with the operating license is assured, will be kept on site in the office. A representative copy of the form signed by Facility Personnel after they have completed their initial or annual refresher training is provided in Attachment H-4. These records will be kept until closure of the Facility for current employees and for 3 years from the date of the individual employee's termination for former employees.

ATTACHMENT H-1

JOB DESCRIPTIONS

POSITION TITLE: Facility Manager

FACILITY: Detroit Michigan

SUMMARY: Responsible to plan, direct, and coordinate the day to day operations of the Facility with respect to the proper storage, and shipment of both product and hazardous waste materials. As part of the function the Facility Manager also:

- acts as an Emergency Coordinator or alternate;
- verifies through periodic inspections that the Facility's operational records are up-to-date and correct;
- selects, develops, motivates, and insures that all employees receive the necessary training to perform their job functions;
- generates, or assists Risk Management, in the preparation of reports required by the permit, or other applicable laws; and
- assists the Division Operations Manager as required.

VERIFICATION:

Experience: Leadership, communication skills, decision making abilities, motivational skills, and at least 3-5 years experience in:

- plant operations, including environmental and regulatory exposure;
- working knowledge of transportation operations; and
- understanding of sales and marketing situations and be able to support the Sales/Marketing groups as needed.

Education: Associates degree at a minimum, although a Bachelors degree in a related field such as hazardous waste management, process control, or regulatory compliance is preferred.

Reports to: Division Operations Manager

RESPONSIBILITIES:

Marketing Operations:

1. Supervises delivery of solvents and accept shipments in name of Detrex.
2. Supervise personnel performing the loading of bulk product shipments. Execute shipping documents.
3. Supervises and directs employees involved in drumming operations for products. Specify type of drum to use. Assure solvent quality. Assure good industrial practices

Facility Manager cont.

are followed in a manner to protect employees safety and the environment. Assure containers are properly marked and labeled in accordance with DOT regulations.

4. Supervise operation of warehouse. Supervise scheduling of work operators. Assure clean and orderly use of warehouse space.
5. Supervise/direct the dispatch and routing of company deliveries. Assure motor operations are performed according to regulations of USDOT and Michigan's regulatory agencies. Read and retain driver logs and vehicle condition reports. Insure that company vehicles are properly maintained and serviced.
6. Recommend hiring of operators.

Environmental and Regulatory Responsibilities:

The full responsibility for on-site hazardous waste management as follows:

- (1) Serves as Emergency Coordinator or alternate.
- (2) Supervises all record keeping operations by Office Coordinator, or for hazardous waste manifests prepared by other branch personnel.
- (3) Supervises the Operators when on-site sampling is performed.
- (4) Supervises the screening of hazardous wastes when performed on site.
- (5) Supervises record keeping of daily and weekly Facility inspection reports as performed by the Secretary, Office Coordinator, or the Facility Operator.
- (6) Is the primary contact for regulatory agency personnel as well as Detrex Corporation Risk Management Group.
- (7) Responsible for maintaining training levels of branch personnel.
- (8) Has responsibility for regulatory compliance in operation of the Part B facility.

POSITION: Office Coordinator

FACILITY: Detroit Michigan

SUMMARY: Under the direction of the Facility Manager, is responsible for invoice to the customer for both solvent and waste. Check in and start cover sheets on waste shipments. Maintains accounts receivable and accounts payable. Also, performs general office duties, such as, in-coming and out-going mail, maintaining files, ordering office supplies, etc. is also responsible for typing purchase orders for capital and equipment purchases.

VERIFICATIONS:

Experience: Minimum of 2 years office administrative experience with background in accounting. Being adept in the use of IBM or Macintosh computers is a plus.

Education: Minimum of high school degree or equivalent

Reports To: Facility Manager

RESPONSIBILITIES:

- (1) May act as one of the facility's alternate Emergency Coordinators.
- (2) Start and maintain customer information packets for each waste shipment that is received. These packets will include:
 - A. Cover Sheet with necessary information completed.
 - B. Letter to the generator noting ability to accept waste
 - C. Generator Waste Profile Sheet.
 - D. Copy of the waste manifest(s).
 - E. Customer purchase order(s).
 - F. Any other information pertaining to waste shipment(s).
- (3) Issue invoices to customers for waste and product. Pricing for invoices will be provided by the salesman.
- (4) Help in the Scheduling of incoming shipments of products, and waste.
- (5) Maintain and control invoice/customer files in good order.
- (6) Maintain inventory for other Detrex Divisional material stored in the warehouse.
- (7) Perform additional duties/special projects as directed by the Facility Manager.

POSITION: Warehouseman

FACILITY: Detroit Michigan

SUMMARY: Under the direction of the Facility Manager, this individual is responsible for handling of hazardous waste in accordance with the latest rules and regulations from MDEQ. Emphasis is also placed on the development of "Better Ways" to operate the Facility in a more efficient manner.

QUALIFICATIONS:

EXPERIENCE: Minimum of three (3) years experience in a manufacturing or chemical processing facility. Knowledge of hazardous waste management, including handling and storage of hazardous waste preferred. Must have experience in maintenance of pumps and related equipment, and in the operation of a forklift.

Education: High school degree or equivalent

Courses: 24-hour OSHA training course as required by 29 CFR 1010.120; training in hazardous waste management as required by both 40 and 49 CFRs for the handling of hazardous waste.

Reports to: Facility Manager

RESPONSIBILITIES:

- (1) May act as an alternate Emergency Coordinator.
- (2) Comply with Detrex procedures for the transfer, storage, and disposal of hazardous waste. This includes completion of all specified training courses.
- (3) Monitor the hazardous waste storage area for problems, (leaks, etc.). Any problems detected must be addressed immediately. I.E.- spills must be clean up, leaking drums must be put in overpacks, etc.
- (4) Unload in-coming shipments and store in the proper location in accordance with Detrex Facility part "B" permit. This includes the unloading of waste as well as other materials, products, etc.
- (5) Insure labels and markings remain intact until the containers are shipped off site for disposal or reconditioning/cleaning/or other approved methods of container preparation.
- (6) Load and unload empty drums.

Warehouseman contd

- (1) Transfer reclaimed and virgin solvents into proper storage containers for resale. This includes the proper labeling of such containers.
- (2) Sampling of all wastes received at the Facility in accordance with the WAP as found in Section C of Detrex's Part B Permit.
- (3) Provide the Office Coordinator information on the wastes processed (received and shipped) at the Facility so that records may be maintained.
- (4) Make daily and weekly inspections and complete forms as necessary.
- (5) Perform additional duties/special projects as directed by the Facility Manager.

POSITION: Driver / Warehouseman

FACILITY: Detroit Michigan

SUMMARY: Operating a solvents and environmental services solvents truck.

QUALIFICATIONS:

- (1) Knowledge of streets in major cities in the geographic areas of coverage.
- (2) Common knowledge of the mechanical operations of all mobile equipment.
- (3) Possession of a valid CDL (Commercial Driver's License) with an "X" endorsement for Hazardous Materials Tanker. Any applicant must have this document in his/her possession at the time of application.
- (4) Know the mechanical condition of the truck and report any defects.
- (5) Pass DOT physical.
- (6) Have respectable driving record. The Company's Risk Management Group will review the driving record of Driver/Operator applicants. Their decision to reject an applicant based on a poor driving record will be considered final and binding.
- (7) Will successfully complete any driver testing as required in the Code of Federal Regulations, part 49, section 380-392. This testing, including conditions, will be administered and certified by Detrex Corporation Risk Management, Facility Manager, and/or their designated agents. This test shall be given on equipment that is equivalent to or simulates the equipment utilized in the Solvents and Environmental Services fleet. This test is required by Detrex Corporation Risk Management, Detrex Corporation's insurance carrier or carriers as well as appropriate Federal Regulations.
- (8) Will have a minimum of three (3) years experience working with hazardous waste, including flammable and corrosive waste, or 6 calendar months on-the-job training involving working with these hazardous materials which will be considered probationary.
- (9) After acceptance for the job, the Driver/Warehouseman will successfully complete training in the required Safety and Environmental topics of the appropriate portions of the Code of Federal Regulations (CFRs) governing working with and around hazardous materials. These include topics in 40 CFR, 49 CFR, and 29 CFR.

Driver / Warehouseman, contd.

Job Performance:

- (1) Must be capable of driving any transportation equipment owned or leased by the company.
- (2) Load and unload or assist in the loading and unloading of any vehicle owned or leased by the company.
- (3) Make bulk deliveries using 1) tank truck, 2) portable tank, 3) tank trailer as required.
- (4) Maintain all necessary log books when required, as outlined in the Code of Federal Regulations, part 49, section 395.
- (5) Make hazardous waste pickups including flammable and corrosive waste using 1) stake trailer or the box van.
- (6) Must act accordingly in a courteous, helpful manner to the customer in all his or her contacts with the customer as the Driver/Warehouseman in many times has the most frequent and visible contact person with the customer.
- (7) Perform job requirements as noted for Warehouseman, as required.

Responsibility:

- (1) Exercise due care of the various pieces of equipment while operating same.
- (2) Operate the equipment in a safe manner. Keep the equipment and the area wherein the work is performed tidy at all times.
- (3) Responsible for implementing the Transporter's Contingency Plan in case of accidental spill of hazardous waste.
- (4) Responsible for ensuring that hazardous waste containers that are picked up meet all conditions as required in the Code of Federal Regulations, part 49, section 172-178 and that all labels and manifests are proper and in accordance with all federal and state codes. This includes but is not limited to signing hazardous waste manifests on the company's behalf and ensuring Land Ban Certification is complete.

JOB DESCRIPTION

POSITION: Quality Control Coordinator

FACILITY: Detroit Michigan

SUMMARY: Position is responsible for ensuring that the Facility operates within the Hazardous Waste Operational Parameters specified in the Facility Part B Section C, the Waste Analysis Plan (WAPP).

VERIFICATION:

Experience: Two to three years experience in operations of various lab equipment as needed to perform the required tests as outlined in the Waste Analysis Plan.

Education: Associates degree, although a bachelors degree is preferred.

Reports to: Operations Manager

HAZARDOUS WASTE RESPONSIBILITIES

- (1) Receive samples of hazardous waste at the facility, log in samples, complete waste sample Screening Sheet for samples, prepare samples for shipment to the appropriate analytical facility, logging in of analytical results and dissemination of results to salesmen and Facility Personnel.
- (2) Ensure that all shipments of non-flammable waste received at the Facility are properly manifested, labeled, marked with accumulation start date, sampled, logged into the hazardous waste operating log, perform analytical work or prepare the sample for shipment to appropriate analytical facility, production control cards are prepared, and bench top fingerprint analysis are performed.
- (3) Ensure that all shipments of flammable waste received at the Facility via the transfer station are properly manifested and are logged into the Transporter's Log Book.
- (4) Perform and maintain analytical analysis on all virgin and reclaimed material at the branch. Perform analytical procedures on products as required by the Operations Manager.

ATTACHMENT H-2

**CORPORATE COMPLIANCE
TRAINING PROGRAM OUTLINE**

Attachment H-2

TRAINING OUTLINE

I. Purpose

II. Objective

III. Definitions

A. DOT HM-215A

1. Hazardous Materials
2. Hazardous Substances
3. Hazardous Wastes
 - a. D001
 - b. D002
 - c. D003
 - d. D004-D042
 - e. Subpart D Listed Materials
4. Shipping Papers (Manifests)
 - a. Sending, Receiving, Uniform
 - b. Signature & Dates
 - c. Proper Shipping Names
 - d. Additional Information
5. Markings
 - a. Requirements
 - b. Duplicating/Conflicting
6. Placards & Labels
 - a. Hazard Class
 - b. Where Placed
 - c. When Offered
7. Containers
 - a. Reuse
 - b. Performance-Oriented Requirements

B. EPA

1. Storage Requirements
 - a. Location
 - b. Containment
 - c. Identifying Markings

Attachment H-2

TRAINING OUTLINE

2. Container Condition
 - a. Closure
 - b. Leaks
3. Storage Limitations
 - a. Conditionally Exempt
 - b. Small Quantity
 - c. Large Quantity
4. Training Requirements

IV. Written Program Requirements

A. Site General Requirements

1. Physical Location
2. Operational Information
3. Equipment Operation & Shutdown (Routine & Emergency)

B. Written Program

1. Purpose of the Plan to Minimize Hazards
2. Role of Coordinator
 - a. Notify State, Local Authorities, departments
 - b. Assessment
 - c. Identification
 - d. Act to Mitigate
 - e. All Clear
 - f. Report Written
3. Hazards Covered under Plan
 - a. Fire
 - b. Explosion
 - c. Release (sudden/non-sudden)
4. General Plan Requirements
 - a. Who Notifies Coordinator
 - b. Information to Provide (5 W's & H)
 - c. Special Duties of Employees
 - d. Fire Department

Attachment H-2

TRAINING OUTLINE

- e. Copy of Plan
- f. Methods of Notification (facility)
- 5. Emergency Plans
 - a. What Activates the Plan (imminent or actual hazard)
 - (1) Fire/Explosion
 - toxic fumes
 - fire spreads - ignite or explode others
 - spread off-site
 - explosion possibility
 - (2) Spill/Release
 - release above reportable quantity (RQ)
 - release to ground outside of containment areas
 - b. PLAN Implementation
 - (1) Notification
 - personal
 - response agencies
 - determine extent of emergency
 - command post
 - notify others
 - determine if in-house can handle
 - (2) Identification
 - material, amount, source, characteristics, etc.
 - (3) Assessment
 - effect to human health and/or environment: direct/indirect
 - hazardous properties
 - threat to human health and/or environment on- and off-site
 - environmental conditions to worsen effect
 - status of response equipment
 - (4) Written Reports
 - government (agency)
 - Risk Management
 - c. Responding to Emergencies
 - (1) Fire and/or Explosion
 - (2) Accidental Release - Liquid
 - (3) Accidental Release - Vapor
 - d. Prevention of Recurrence of Spread of Fires, Explosions or Releases
 - e. Storage and Treatment of Released Material
 - f. Storage of Incompatible Wastes
 - g. Storage of Ignitable Wastes
 - h. Post-Emergency Equipment Maintenance
 - i. Container Spills and Leakage
 - j. Tank Spills and Leakage

Attachment H-2

TRAINING OUTLINE

- 6. Emergency Equipment
- 7. First Aid
- 8. Coordination Agreements
- 9. Evacuation
- 10. Training
- C. Required Reports
- D. Amendments to The Plan
- E. Permit Parameters

ATTACHMENT H-3

**CURRICULUM VITA - TRAINING
DIRECTOR**

DAVID D. CRAIG, CHMM, CET
28760 Florence
Garden City MI 48135
Residence: (313) 427-4006

EDUCATION / EXPERIENCE

DOT Drug and Alcohol Compliance Workshop J.J. Keller Grand Rapids MI	1995
Industrial Storm Water Training MDNR, Water Quality Group Livonia MI	1995
HAZWOPER, 40 Hour Certification New Environment, Inc.	1994
Certified HAZWOPER Trainer Workshop New Environment, Inc.	1994
Annual RCRA Compliance Course Engineers Review, Inc. Romulus MI	1994
Implementation of TQM Workshop GMI Engineering & Management Institute Flint MI	1992
Fundamentals of Quality Management for Small Business US Chamber of Commerce Flint MI	1992
Plant Level Environmental Compliance Executive Enterprises Chicago IL	1991
Short Run SPC Hydra-Matic (UAW/GM) Ypsilanti MI	1990
SARA III/WRTK Training Seminar Environmental Resource Center Chicago IL	1989
Qualified Observer of Visible Emissions Training MDNR Air Pollution Control Division Wayne MI	1989
Planning and Managing of Warehouse Operations Temple University Philadelphia PA	1989
Management Seminar	1986
Supervisory Seminar	1983
BS, Chemical Engineering University of Michigan Ann Arbor MI	1981

CAREER HISTORY

DETREX CORPORATION, Southfield MI
Chemical and related fields.

1993-Present

Corporate Environmental and Safety Engineer, Southfield MI

Responsible for assisting the Corporate Manager of Regulatory Compliance in completion of RCRA programs.

- Assisted in the drafting of revised safety programs for all facilities;
- Assist in the auditing of both Detrex and third party facilities to insure compliance with all Governmental Regulations;
- Assist in the training of all facility personnel in applicable OSHA, EPA, and DOT programs;
- Developed newsletter to inform all facilities of new pending or promulgated regulations as found in the Federal Register.

LOCKHART CHEMICAL, Allison park PA

1991-1993

Manufacturer of Sulfonates and Coatings used in the formulation of end use products for the steel and auto industries.

Regulatory Engineer, Flint MI

Operated as Lab Manager for facility, managed plant security, developed and implemented safety programs, activated safety committee, obtained CAA permits from the MDNR, and completed all governmental reports.

- Developed safety programs;
- Developed Waste Tracking Program;
- Obtained a AC Construction and Operating permit associated with an Incinerator;
- Brought facility into compliance with all governmental reporting requirements.

QUAKER CHEMICAL, Conshohocken PA

1988-1991

A chemical specialty manufacturer of products used in the steel and automotive industries. Annual revenues in excess of \$200 MM.

Environmental/Safety Manager Detroit MI

1989-1991

Audited contractors, generated reports for governmental agencies, obtained equipment permits, developed and performed training programs, and worked directly with insurance carriers to resolve concerns. Acted as the Statistical Process Control (SPC) Coordinator for the Detroit Facility.

- Implemented procedural changes to reduce contaminants (fat, oil, and grease, BOD, and metals) by over 10 % in effluent discharged under pre-treatment permit;
- Developed Safety programs for various OSHA regulations;
- Managed local quality programs essential in helping obtain quality awards (Rouge Steel Q-1 and Double Eagle);
- Utilized SPC to reduce the Out of Specification (OOS) over ten fold in one key intermediate resulting in a decrease in OOS in one product line by over 30%;
- Chaired SPC and safety committees, and participated in Employee Involvement Group.

Production Supervisor Detroit MI

1988-1989

Responsible for all aspects of the manufacturing operations producing nine to ten million pounds per month. These responsibilities included scheduling, answering customer inquiries, troubleshooting equipment problems, and interfacing with quality control.

- Achieved 100% on-time shipment of same day orders;
- Shipped over 90% of all orders within 3 days of receipt;
- Reduced carrier demurrage by over 50 % saving \$30,000 per year;
- Directed expansion of operations from one to two shifts;
- Developed training programs for new hires;

ANDERSON DEVELOPMENT COMPANY, Adrian MI

1981-1988

A specialty chemical manufacturer of proprietary and contracted products, from major chemical companies, used in the manufacture of industrial and consumer products.

Production Manager , Activated Carbon Plant

1985-1988

Managed a semi-works plant utilizing high temperature chemical process to produce an ultra high surface area carbon. Plant was managed during construction and startup.

- Applied new technology to a manufacturing process achieving over \$500,000 in sales;
- Directed a 24 hour operations of 12 employees.

Production Manager , Prepolymer and Intermediate Division

1981-1985

Managed production of proprietary products and custom products for outside firms. Worked with the plant manager and research group on generating cost estimates for scale up of new projects. Responsibilities included inventory control, scheduling, billing, conducting safety meetings, and assuming the role of plant manager as needed.

- Supervised 14 employees in a 24 hour per day, 5 day operation
- Reduced on-site waste to below EPAs 90 day limit.

ORGANIZATIONS / CERTIFICATIONS

Certified Industrial Storm Water Operator
MDNR, Water Quality Group Livonia MI

1995

Certified HAZWOPER Trainer
New Environment, Inc.

1994

Certified Hazardous Materials Manager (CHMM) #5631
Institute of Hazardous Materials Management Detroit MI

1994

Certified Environmental Trainer (CET) # 94-285
National Environmental Training Association Washington, DC

1994

American Institute of Chemical Engineers

1981

ATTACHMENT H-4

**TYPICAL TRAINING
ACKNOWLEDGMENT FORM**

**40 CFR 262.34 HAZARDOUS WASTE GENERATORS
REVIEW**

Last Date of Review and Person Reviewing:

Name (print)

Signature

INSTRUCTOR: _____

DATE: _____

29 CFR 1910.38 EMERGENCY ACTION PLAN & 40 CFR 264/265 SUBPART D CONTINGENCY PLAN

Last Date of Review:

Name

Signature

INSTRUCTOR:_____

Date:_____

SECTION I

CLOSURE PLAN

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SECTION I

CLOSURE PLAN, POST-CLOSURE PLAN AND FINANCIAL REQUIREMENTS

This section identifies operational activities for the Detrex Corporation Facility (Facility) located in Detroit, Michigan which are necessary to completely close the hazardous waste storage areas at the end of their intended operating lives. This section also covers partial closure, including removal of a single containment area. A post-closure plan is not required because this is not a disposal facility; therefore, all wastes will be removed at closure.

The information in this section is provided in accordance with Michigan Act 64 Rule 29.9613 which incorporates 40 CFR Part 264, Subpart G, by reference. The applicable section(s) of the State and Federal Regulations are referenced where applicable.

I-1 CLOSURE PLAN

[40 CFR 270.14(B)(13), 264.112(A)(1) AND (2)]

The Facility will maintain an on-site copy of the approved Closure Plan, and all revisions to the plan, until the certification of closure completeness has been submitted and accepted by the regulatory authorities.

Detrex Corporation will maintain on site a copy of the closure plan, and all revisions to the plan, until the certification of closure completeness has been submitted and accepted by MDEQ. Detrex will notify the director at least 180 days prior to the date Detrex expects to begin final closure at the Eaton Ave. Facility.

Attachment I-1 provides a listing of all the approved waste codes. A Facility Plan identifying all hazardous waste management units is provided in Attachment I-3.

I-1 a CLOSURE PERFORMANCE STANDARD

[40 CFR 264.111]

This Closure Plan is designed to ensure that the Facility will be closed in a manner that achieves the following:

- 1) Minimizes the need for further maintenance;
- 2) Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, or hazardous constituents to the ground or surface waters or to the atmosphere; and
- 3) Complies with the closure requirements of 40 CFR 264.111, including, but not limited to, the requirements of the regulations under 40 CFR § 264.178 - removal of all hazardous waste and residues from containment system.

At the time of closure, the entire waste inventory will be transported to an off-site licensed hazardous waste management facility. The complete removal of the entire hazardous waste inventory and the decontamination of the hazardous waste management units will ensure the achievement of the performance standard.

I-1 b PARTIAL CLOSURE AND FINAL CLOSURE ACTIVITIES

[40 CFR 264.112(B)(1) THROUGH (B)(7)]

At such times in the operating life of the Facility that equipment may be updated, replaced, or if different operations may commence, partial closure of the Facility may occur. Closure

procedures for partial closure would be essentially the same as those stipulated in this Closure Plan for final closure, as appropriate to the unit scheduled for partial closure.

I-1 c MAXIMUM WASTE INVENTORY
[40 CFR 264.112(B)(3)]

The maximum inventory of hazardous wastes that can be stored in this Facility at any time is 13,750 gallons. This is comprised of the following:

- Container Storage Area No. 1= 3,520 gallons (i.e., 64 x 55-gallon drums);
- Container Storage Area No. 2= 3,520 gallons (i.e., 64 x 55-gallon drums);
- Container Storage Area No. 3= 1,430 gallons (i.e., 26 x 55-gallon drums); and
- Container Storage Area No. 4= 5,280 gallons (i.e., 96 x 55-gallon drums);

I-1 d SCHEDULE OF CLOSURE
[40 CFR 264.112(B)(6)]

Detrex Corporation does not anticipate completing final closure of the Detroit, Michigan Facility prior to expiration of this RCRA Part B Permit. A conceptual closure schedule is provided in Attachment I-4. It is believed that final closure could be conducted by a qualified independent contractor in a period of approximately two weeks.

I-1d(1) Time Allowed for Closure
[40 CFR 264.112(b)(2), 264.113(a) and (b)]

Within 90 days after receipt of the final volume of hazardous wastes, and at the direction of the Board of Directors of Detrex Corporation, final closure activities will be initiated. These activities will be completed within 180 days of initiation; the tasks and time required for partial closure would follow those given in the closure plan. The approximate time frame for each task is provided in Attachment I-2. The Regional Administrator will be notified by Detrex Corporation 180 days before beginning final closure. Final closure will be certified by both Detrex Corporation and an independent, qualified, registered professional engineer.

I-1d(1)(a) Extensions For Closure Time
[40 CFR 264.113(a) and (b)]

Detrex Corporation does not anticipate requiring an extension for closure time for the Facility. In the event this becomes necessary, a request will be made to the

Regional Administrator by Detrex Corporation meeting the requirements of 40 CFR 264.113(a).

I-1 e CLOSURE PROCEDURES
[40 CFR 264.112, 264.114]

I-1e(1) Inventory Removal [40 CFR 264.112(b)(3)]

At the time of partial closure of one or more of the hazardous waste management units, the hazardous wastes from the unit(s) designated for closure may be:

- 1) placed in the container storage area; or
- 2) transferred to a DOT-transport vehicle (containers or bulk tank truck) and transported off site to a properly permitted facility.

At final closure, the entire remaining inventory of hazardous wastes would be processed in the same manner. It is likely that hazardous wastes to be transported off site would be sent to a permitted facility for recovery or combined/commingled and transported to a RCRA-permitted TSDF.

I-1e(2) Disposal or Decontamination of Equipment, Structure and Soils
[40 CFR 264.112(b)(4), 264.114]

The procedures which will be followed to decontaminate all Facility equipment and structures are described in the following applicable sections.

I-1e(3) Closure of Disposal Units/Contingent Closures

This section is not applicable to the Facility.

I-1e(4) Closure of Containers [40 CFR 264.178, 264.112(b)(3), 270.14(b)(13)]

During closure, the remaining container inventory may either be transferred to bulk transport units or for transportation to a properly permitted facility or shipped from the Facility in the original containers. Empty containers, if waste is shipped out by bulk trucks (per 40 CFR 261.7), will be either sent to a reconditioner to be recycled or sent to a facility to be crushed and/or shredded and disposed.

Following the removal of the container inventory, the container storage area and its respective secondary containment system will be swept. This may also include the

primary and secondary staging areas and loading/unloading areas if final closure is being performed. Subsequently, the area designated for closure will be carefully inspected to identify any potential cracks, gaps, or unsealed joints in the secondary containment area. Any cracks, gaps or unsealed joints will be repaired prior to proceeding with decontamination to ensure that all rinse water is contained. Soil sampling beneath any cracks, gaps or unsealed joints which may reasonably have provided a migratory pathway to underlying soils will be required after decontamination is complete.

The secondary containment areas will then be decontaminated by a floor wash/scrubbing operation followed by a triple rinse. Contaminated media generated will be collected, using pumps, sponges and/or absorbent material, placed in DOT-approved containers and transported off-site to a permitted TSDF unless waste characterization sampling indicates alternate disposal is appropriate. Sandblasting or shotblasting may also be conducted if determined necessary based upon visual staining of the concrete or preliminary analytical results of confirmation sampling. It is noted that during partial closure, hazardous wastes generated may be managed in a remaining on-site hazardous waste management unit. Solid wastes which are not generated from hazardous waste may be managed in an appropriate location at the Facility.

Decontamination of the secondary containment areas will be verified by collection of two samples per secondary containment area of the final rinsate and submitting the samples for analysis of the all constituents that were in storage. Analyses will be by an approved method of SW-846. The "cleanup" level will be the appropriate drinking water MCLs of the National Primary Drinking Water Regulations (40 CFR 141) and 40 CFR 264.94(a)(2) for inorganic parameters and certain organic parameters that have established MCLs or some other established criteria. The cleanup level for organic parameters with no established MCLs will be the appropriate practical quantitation limits (PQLs) as defined by SW-846. Attachment E-2 summarizes the parameter list and currently applicable cleanup level.

Sampling and analytical protocols to be followed under the closure plan are described in the Quality Assurance Project Plan (QAPP) provided as Attachment I-5.

In the event a piece of equipment can not be decontaminated to the cleanup level stipulated on Attachment I-2, the piece of equipment will be characterized and disposed at an appropriately permitted facility.

All equipment used during decontamination which may have come in contact with potentially contaminated substances or a potentially contaminated surface will also be decontaminated prior to demobilization from the site. The decontamination of equipment shall also consist of steam cleaning which may be completed over plastic in order to contain the washwater. This washwater will be handled as described above.

I-1e(5) Closure of Tanks [40 CFR 270.14(b)(13), 264.197, 264.112(b)(3)]

This section is not applicable to the Facility.

I-1e(6) Closure of Waste Piles [40 CFR 270.18(h), 264.258]

This section is not applicable to the Facility.

I-1e(7) Closure of Surface Impoundments [40 CFR 270.17(f), 264.228(a)(1), (2) and (b)]

This section is not applicable to the Facility.

I-1e(8) Closure of Incinerators [40 CFR 264.351, 270.14(b)(13)]

This section is not applicable to the Facility.

I-1e(9) Closure of Landfills [40 CFR 270.21(e), 264.310(a)]

This section is not applicable to the Facility.

I-1e(10) Closure of Land Treatment Facilities [40 CFR 264.280(a), 270.20(f)]

This section is not applicable to the Facility.

I-1e(11) Closure of Miscellaneous Units [40 CFR 270.23(a)(2)]

This section is not applicable to the Facility.

I-1e(12) Closure of Boilers and Industrial Furnaces (BIFs) [40 CFR 266.102 (a)(2)(vii)]

This section is not applicable to the Facility.

I-1e(13) Closure of Containment Buildings [40 CFR 264.1102]

This section is not applicable to the Facility.

I-2 POSTCLOSURE PLAN/CONTINGENT POST-CLOSURE
[40 CFR 270.14(B)(13)]

Post-closure care will not be required for this Facility since all hazardous wastes will be removed at final closure.

I-3 NOTICES REQUIRED FOR DISPOSAL FACILITIES

I-3 a CERTIFICATION OF CLOSURE
[40 CFR 264.115, 264.280]

The Detrex Facility is not a disposal facility; however, within 60 days of completion of final closure, a closure certification document will be submitted to the Regional Administrator. The document will certify that the Facility has been closed in accordance with the approved closure plan. The certification will be signed by Detrex Corporation and by an independent registered professional engineer.

I-3 b SURVEY PLAT
[40 CFR 264.116]

Since the Detrex Facility is not a disposal facility and no hazardous wastes will remain after final closure, a survey plat is not required.

I-3 c POST-CLOSURE CERTIFICATION

There will be no post-closure period, therefore this is not applicable to this Facility.

I-3 d POST-CLOSURE NOTICES
[40 CFR 270.14(B)(14), 264.119]

There will be no post-closure period, therefore this is not applicable to this Facility.

I-4 CLOSURE COST ESTIMATE

[40 CFR 270.13(b)(15), 264.142]

The closure cost information is presented in accordance with proper requirements. The estimate assumes closure procedures are completed by a third party at the time that the Facility closure would be most expensive (i.e. maximum inventory). The cost estimate for disposal assumes the material will be treated rather than accounting for any potential recovery value for the product. The total closure cost for the closure of the Detrex Corporation Detroit Facility is estimated at \$78,390 (1996 dollars). The closure cost estimate breakdown is provided in Attachment I-6. Closure activities include removal of waste inventory, decontamination and closure certification.

Final closure activities include the removal of inventory from container storage areas and closure certification. The closure of one of the hazardous waste management units will involve only those costs directly associated with the unit.

The cost estimate assumptions made are as follows:

- 1) All hazardous waste storage areas are full to capacity at the time of closure.
- 2) All hazardous waste will be transported off site to a permitted facility in accordance with all State and Federal regulations.
- 3) The fact that the hazardous waste may have potential economic value has been ignored.
- 4) Costs are based on 1996 current year costs. All labor rates reflect commercial rates and include fringe benefits, payroll burden and taxes.
- 5) Contractor costs (three laborers, supervisor and equipment) are estimated at \$1,600 per day.
- 6) Total costs include a 10 percent contingency for administrative and 20 percent contingency for miscellaneous operating costs.
- 7) The costs are based on a point in the operating life when the extent and manner of operation would make closure most expensive.

This closure cost estimate will be maintained at this Facility. It will be revised whenever a change in the closure plan affects the cost of closure. It will be adjusted annually as required by pertinent regulations, or when the types/quantity of waste received at the Facility change.

I-5 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE
[40 CFR 270.14(b)(15) & 264.143]

Financial assurance for closure costs is provided by an appropriate mechanism closure as found under Michigan's Act 64 Rule 299.9703. A copy of the most recent mechanism is provided in Attachment I-7.

I-6 POSTCLOSURE COST ESTIMATE
[40 CFR 270.14(b)(6)]

Post-closure care will not be required for this Facility since all hazardous wastes will be removed at final closure.

I-7 FINANCIAL ASSURANCE MECHANISM FOR POST CLOSURE
[40 CFR 270.14(B)(16)]

Financial assurance is not necessary since post-closure care is not required.

I-8 LIABILITY REQUIREMENTS
[40 CFR 270.14(b)(17) & ACT 64 RULE 299.9710]

I-8 a COVERAGE FOR SUDDEN ACCIDENTAL OCCURRENCES
[ACT 64 RULE 299.9710(1)]

A copy of proof of liability insurance is provided in Attachment I-8. This provides an endorsement of certification of appropriate insurance coverage pursuant to Michigan's ACT 64 RULE 299.9710

I-8 b COVERAGE FOR NON-SUDDEN ACCIDENTAL OCCURRENCES
[ACT 64 RULE 299.9710(2)]

The Facility does not have a surface impoundment, landfill or land treatment facility; hence, coverage for non-sudden accidental occurrence is not required.

I-9 USE OF STATE-REQUIRED MECHANISMS
[40 CFR 270.14(b)(18)]

I-9 a USE OF STATE-REQUIRED MECHANISMS
[40 CFR 270.14(b)(18) ACT 64, RULE 299.9710(3)]

The liability insurance provided for in Section I-8a meets all necessary Federal and State requirements.

I-9 b STATE ASSUMPTION OF RESPONSIBILITY
[40 CFR 270.14(b)(18)]

Detrex Corporation does not intend to request State assumption of the legal or financial responsibilities for the Facility.

ATTACHMENT I-1

LIST OF HAZARDOUS WASTES

ATTACHMENT I-1

LIST OF HAZARDOUS WASTES

<i>Waste</i>	<i>EPA Hazardous Waste Number and Hazard Code</i>
Corrosive Waste	D002 (C)
Arsenic	D004 (T)
Barium	D005 (T)
Cadmium*	D006 (T)
Chromium	D007 (T)
Lead	D008 (T)
Mercury	D009 (T)
Selenium*	D010 (T)
Silver	D011 (T)
Endrin	D012 (T)
Benzene	D018 (T)
Carbon Tetrachloride	D019 (T), U211(T)
Chlorobenzene	F002 (T), D021(T), U037(T)
Chloroform	D022 (T), U044(T)
1,4-Dichlorobenzene	D027 (T), U072(T)
1,2-Dichloroethane	D028 (T), U077(T)
1,1-Dichloroethylene	D029 (T), U078(T)
2,4-Dinitrotoluene	D030 (T)
Heptachlor*	D031 (T)
Hexachlorobenzene	D032 (T), U127(T)
Hexachloroethane	D034 (T), U131(T)
Methyl Ethyl Ketone	D035 (T)
Nitrobenzene	D036 (T)
Tetrachloroethylene	F001 (T), F002(T), D039 (T), U210(T)
Trichloroethylene	F001(T), F002(T), D040 (T), U228(T)
Vinyl Chloride	D043 (T)
1,1,2,2-Tetrachloroethane	U209(T)
1,1,1,2-Tetrachloroethane	U208(T)
Dichlorodifluoromethane	U075(T)
1,1-Dichloroethane	U076(T)
1,1,1-Trichloroethane	F001(T), F002(T), U226(T)
Dichloromethane	U080(T)
Trichlorofluoromethane	F001(T), F002(T), U121

Note:

Hazard Code based on 40 CFR 261.

Wastes may be liquid or solid.

* Extremely Hazardous Waste

H Acute Hazardous Waste

MI ATCH - 11.DOC

T

Toxic Waste

C

Corrosive Waste

12/09/96

ATTACHMENT I-1

LIST OF HAZARDOUS WASTES

Waste	EPA Hazardous Waste Number and Hazard Code
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Wastewater treatment sludges from electroplating operations except from the following processes:

- | | |
|---|------|
| 1. sulfuric acid anodizing of aluminum; | |
| 2. tin plating on carbon steel; | |
| 3. zinc plating (segregated basis) on carbon steel; | |
| 4. aluminum or zinc-aluminum plating on carbon steel; | |
| 5. cleaning/stripping associated with tin, zinc and | |
| 6. aluminum plating on carbon steel; and | |
| 7. chemical etching and milling of aluminum. | F006 |

Waste water treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process	F019
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Note:

Hazard Code based on 40 CFR 261.

Wastes may be liquid or solid.

* Extremely Hazardous Waste

H Acute Hazardous Waste

MI ATCH - I1.DOC

T

C

Toxic Waste

Corrosive Waste

12/09/96

ATTACHMENT I-2

**PRACTICAL QUANTIFICATION LIMITS FOR
ORGANIC ANALYSES**

ATTACHMENT I-2

CLOSURE CONFIRMATION CLEANUP LEVELS

<i>Parameter</i>	<i>USEPA MCL (mg/L)</i>	<i>PQL (mg/L)</i>	<i>SW-846 Test Methods</i>
Arsenic		0.5	6010
Barium		0.02	6010
Cadmium*	0.005	0.005	6010
Chromium	0.1	0.1	6010
Lead	0.015 (AL)	0.015	6010
Mercury	0.002	0.002	7471
Selenium*	0.05	0.05	6010
Silver	0.1 (SMCL)	0.1	6010
Benzene	0.005	0.005	8260
Carbon Tetrachloride	0.005	0.005	8260
Chlordane*	0.002	0.002	8081
Chlorobenzene	NA	0.005	8260
Chloroform	0.1 (P)	0.1	8260
1,4-Dichlorobenzene	0.075	0.0075	8260
1,2-Dichloroethane	0.005	0.005	8260
1,1-Dichloroethylene	0.007	0.007	8260
2,4-Dichlorotoluene			
Heptachlor*	0.0004	0.0004	8081
Hexachlorobenzene	0.001	0.001	8270
Hexachloroethane	NA	0.01	8260
Methyl Ethyl Ketone (2-Butanone)	0.1	0.1	8260
Nitrobenzene		0.01	8270
		0.04	8090
Tetrachloroethylene	0.005	0.005	8260
Vinyl chloride		0.002	8010
		0.01	8240
1,1,1,2-Tetrachloroethane		0.005	8010
1,1,2,2- Tetrachloroethane	NA (L)	0.0005	8010
		0.005	8240
Dichlorodifluoromethane	NA (L)	0.005	8260
1,1-Dichloroethane	NA	0.0001	8010
		0.005	8240
1,1,1-Trichloroethane	0.2	0.005	8240
Dichloromethane (Methylene Chloride)	0.005	0.005	8010
		0.005	8240
Trichlorofluoroethane	NA (L)	0.005	8260
Chlorobenzenes	0.1	0.005	8240
		0.002	8020

NOTE

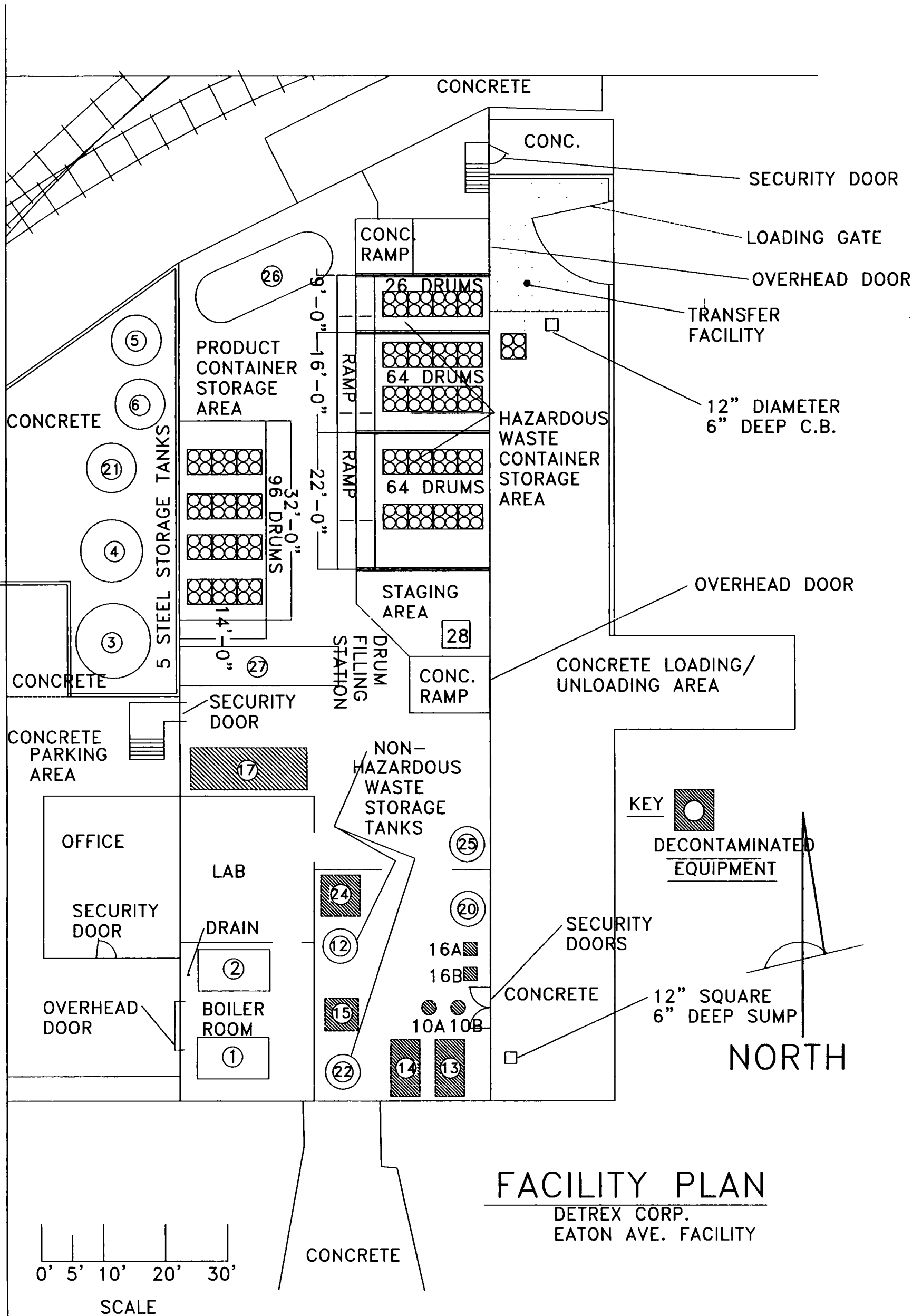
N/A	Not Available	PQL	Practical Quantitation Level	L	Listed
AL	Action Level	P	Proposed MCL		

(1) Follows USEPA Standards

Ref: Indiana Department of Environmental Management, Regulated Chemical Drinking Water Contaminants, MCL Summary Sheet, October 1994.
Drinking Water Regulations and Health Advisories, USEPA Office of Water, November 1995.

ATTACHMENT I-3
FACILITY PLAN

DATE	1/8/12	BY	DEC.10.98	PROJECT	DETREX CORPORATION	9601
REVISION		NO.		DESCRIPTION		
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FACILITY PLAN
DETREX CORP.
EATON AVE. FACILITY

ATTACHMENT I-4

CLOSURE SCHEDULE

ATTACHMENT I-5

CLOSURE COST ESTIMATE

Attachment I-5
CLOSURE COST ESTIMATE (1996 \$)

<i>Item</i>	<i>Activity</i>	<i>Estimated Cost</i>
A.	<u>INVENTORY REMOVAL</u>	
	• Transfer container contents to bulk tanker (1 1/2 day)	2,400
	Subtotal A	\$ 2,400
B.	<u>SECONDARY CONTAINMENT DECONTAMINATION</u>	
	• Sweep and containerize sweepings (The hazardous wastes storage areas and loading unloading areas (1/2 day)	\$ 800
	• Clean secondary containment areas and containerize washwaters (1 1/2 day)	\$ 2,400
	Subtotal B	\$ 3,200
C.	<u>TRANSPORTATION AND DISPOSAL</u>	
	• Bulk liquid waste disposal 13,750 gal @ \$1.70/gal	\$ 23,375
	• Washwater disposal 4,100 gal @ \$0.75/gal	3,075
	• Containerized solids/sludges 10 drum @ \$255/drum	2,550
	Subtotal C	\$ 29,000
D.	<u>SAMPLING AND ANALYSIS</u>	
	• Technician 2 days @ \$550	\$ 1,100
	• Analytical - water rinse (16) @\$850 ea.	13,600
	- soil (4) @\$900 ea.	3,600
	Subtotal D	\$ 18,300

Attachment I-5
CLOSURE COST ESTIMATE (1996 \$)

<i>Item</i>	<i>Activity</i>	<i>Estimated Cost</i>
E.	<u>OVERSIGHT/CERTIFICATION</u>	
	• Oversight 6 days @ \$650	\$ 3,900
	• Certification Report L.S.	<u>3,500</u>
	Subtotal E	\$ 7,400
	Subtotal	\$ 60,300
	Administration (10%)	\$ 6,030
	Cost (20%)	<u>\$ 12,060</u>
	TOTAL	\$ 78,390

ATTACHMENT I-6

FINANCIAL ASSURANCE MECHANISM



233 MAIN STREET • P.O. BOX 2350 • NEW BRITAIN CT 06050-2350 • (860) 224-2000

RIDER

BOND NO. 5925 - INCREASE IN BOND AMOUNT

Principal: Detrex Corp. - Solvent Division

Obligee: State of Michigan

This rider is to increase the amount of Bond No. 5925 from \$5,000.00 to \$105,000.00.

All other terms and conditions of this bond remain the same.

This 17th day of June, 1996.

ACSTAR Insurance Company
SURETY



HENRY W. MOZKO, JR. - PRESIDENT

HWNJR/sg



233 MAIN STREET • P O BOX 2350
NEW BRITAIN, CT 06050-2350
(203) 224-2000

POWER OF ATTORNEY

Know all men by these presents: That ACSTAR Insurance Company, a corporation of the State of Illinois, having its principal office in the City of New Britain, Connecticut, pursuant to the following Resolution, which was adopted by the Board of Directors of the said Company on August 31, 1993, to wit:

RESOLVED, That the following Rules shall govern the execution for the Company of bonds, undertakings, recognizances, contracts and other writings in the nature thereof:

- (1) That the Chairman, the President, the Vice President and General Counsel, or any Attorney-in-Fact, may execute for and on behalf of the Company any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof, the same to be attested when necessary by the Corporate Secretary, or any Assistant Corporate Secretary, and the seal of the Company affixed thereto, and that the Chairman or President may appoint and authorize any other Officer (elected or appointed) of the Company, and Attorneys-in-Fact to so execute or attest to the execution of all such writings on behalf of the Company and to affix the seal of the Company thereto.
- (2) Any such writing executed in accordance with these Rules shall be as binding upon the Company in any case as though signed by the President and attested to by the Corporate Secretary.
- (3) The signature of the Chairman or the President of the Company may be affixed by facsimile on any power of attorney granted pursuant to this Resolution, and the signature of a certifying officer and the seal of the Company may be affixed by a facsimile to any certificate of any such power, and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company.
- (4) Such other Officers of the Company, and Attorneys-in-Fact shall have authority to certify or verify copies of this Resolution, the By-Laws of the Company, and any affidavit or record of the Company necessary to the discharge of their duties.

does hereby nominate, constitute and appoint

Henry W. Nozko, Sr., Henry W. Nozko, Jr., Robert H. Frazer, David A. Price, William J. Dykas each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding TWENTY MILLION DOLLARS (\$20,000,000.00) each, and the execution of such writings in pursuance of these presents, such be as binding upon said Company, as fully and amply, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office.

IN WITNESS WHEREOF, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President, have hereunto subscribed their names and affixed the corporate seal of the **ACSTAR INSURANCE COMPANY** this 1st day of November 1993.

ACSTAR Insurance Company

by

Henry W. Nozko, Sr., Chairman

by

Henry W. Nozko, Jr., President

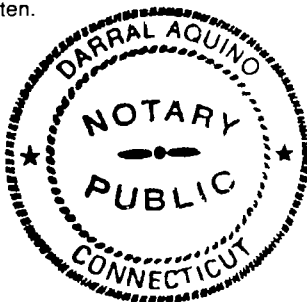
STATE OF CONNECTICUT)

) ss NEW BRITAIN

COUNTY OF HARTFORD)

On this 1st day of November A.D. 1993, before me, a Notary Public of the State of Connecticut came, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President of the **ACSTAR Insurance Company**, to me personally known to be the individuals and officers who executed the preceding instrument, and they acknowledged that they executed the same, and the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and their signatures were duly affixed by the authority and direction of the said corporation, and the Resolution adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of New Britain the day and year first above written.



Notary Public - Darral Aquino

I, the undersigned, Secretary of **ACSTAR Insurance Company**, do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Secretary and affixed the corporate seal of the Corporation, this

17 day of June, 1996.

Robert H. Frazer

Secretary

currency rate, interest rate or residue guaranties.

ATTACHMENT I-7

LIABILITY INSURANCE

DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION
POLLUTION LIABILITY INSURANCE

(Sudden and Accidental)

**HAZARDOUS WASTE TRANSFER FACILITY LIABILITY AMENDATORY ENDORSEMENT
(MICHIGAN)**

This endorsement changes the policy effective on the inception date of the policy or as of the date indicated by Attachment of this endorsement to the pollution liability policy will fulfill the insurance requirements of the State of Michigan Act 64, P.A. 1979, as amended (Hazardous Waste Management Act) and Administrative Rule R. 299.9711 of the Michigan Administrative Code.

COMMERCE AND INDUSTRY

Insurer INSURANCE COMPANY Date Effective January 30, 1996
70 Pine Street
Insurer's Address New York, NY 10270 Policy Period From 1/30/96 To 1/30/97
Policy Number PLL 529 3518 Name, Address, and EPA I.D. No. of Facility(ies) Covered
Insured Detrex Corporation Detrex Corporation
P.O. Box 5111 12886 Eaton Avenue, Detroit, MI 48227
Insured's Address Southfield, MI 48086 MID 091 605 972

The Insurer hereby certifies that it has issued the Insured the policy of insurance identified above to provide financial assurance and responsibility for bodily injury and property damage caused by sudden and accidental occurrences arising from the hazardous waste transportation operations, including without limitation, transport and transfer facility activities, of the Insured.

The insurance afforded with respect to sudden and accidental occurrences is subject to all of the terms and conditions of the policy provided however that any provision of the policy inconsistent with Sections A through D of this form are hereby amended to conform with Sections A through D.

.. Limits of liability as respects bodily injury and property damage are provided in the amount of:

\$ 1,000,000 Per Occurrence (\$500,000 minimum) \$ 2,000,000 Annual Aggregate

The following deductible per occurrence applies: (if none, so state) \$ 50,000 (Not to exceed 5% of 1 per occurrence limit amt)

- B. Legal defense costs are covered in addition to the stated limit(s) of liability in this policy.
- C. No exclusion of liability coverage relating to pollutants, contaminants or irritants applies if an occurrence is sudden and accidental.
- D. The Insurer will provide the Waste Management Division, Department of Natural Resources, P.O. Box 30241, Lansing, MI 48909 with at least thirty (30) days written notice of cancellation, termination, or material change to this policy which affects the coverages required by R 299.9711. Such notices shall be given no matter which party initiates the cancellation, termination, or material change and whether or not nonpayment of premium is involved.

I hereby certify that the wording of this endorsement is identical to the wording provided by the Director on the date above written, and that the Insurer is licensed to insure hazardous waste transporting activities, or is eligible to provide such insurance, in the State of Michigan.

Filing of this endorsement is required
by law (MAC R 299.9711).


Signature of Authorized Agent Date 1/30/96

John I. Rich, Jr.

Name of Agent or Broker

1375 E. Ninth Street, Suite 2950

Street and Number

Cleveland, OH 44114

City, State and ZIP Code

SECTION J

**CORRECTIVE ACTION FOR SOLID
WASTE MANAGEMENT UNITS**

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J-1a(1) Container Storage Area.....	J-4
J-1a(2) Generator Accumulation Tank	J-5
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LIST OF ATTACHMENTS

ATTACHMENT J-1	LOCATION OF SOLID WASTE MANAGEMENT UNITS
ATTACHMENT J-2	LIST OF FORMER PERMITTED HAZARDOUS WASTES

SECTION J

CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

This section provides information on the condition of all past and present solid waste management units as required by Michigan ACT 64 RULE 299.9629.

J-1 SOLID WASTE MANAGEMENT UNITS
[40 CFR 270.14(D)(1), 264.101]

The solid waste management units (SWMU's) presently operational at the Detrex Corporation facility include the following:

- 1) Container Storage Areas;
- 2) Generator Accumulation Tank;
- 3) Waste Handling Area; and
- 4) Waste Recycling Operation.

Each of these solid waste management units is identified on a facility plan provided in Attachment J-1.

J-1A CHARACTERIZE THE SOLID WASTE MANAGEMENT UNIT

J-1a(1) Container Storage Area

The container storage areas are located entirely within an enclosed building structure. Containers are placed on a concrete slab floor, complete with peripheral concrete curbing and access ramps to provide adequate secondary containment. The floor slab is free of all gaps, there are no expansion or control joints, and the slab has no floor drains or other such openings. Further details on the container storage areas are presented in Section D of this permit application.

Hazardous Waste containers are stored in the designated area. The entire warehouse area is utilized for secondary containment. **This area measures approximately 90 feet by 70 feet.**

The container storage area has been in operation since 1977. The maximum volume of hazardous waste that may be stored in the container storage area is currently 13,750 gallons (250 x 55 gallon drums). A list of each of the former permitted (i.e., prior to current permit application) hazardous wastes and the appropriate Hazardous Waste Identification Numbers of the waste is presented in Attachment J-2.

A request to close the recycling operation of this facility was submitted to MDEQ for approval in the summer of 1996. This request has been approved, although at this submission the closure has not yet been certified.

J-1a(2) Generator Accumulation Tank

The hazardous waste recycling operation used a single 5,000 gallon storage vessel for the accumulation of still bottoms remaining at the end of the distillation procedures. Hazardous wastes are stored in this tank for less than 90 days, prior to off-site disposal. As such, it is not a regulated unit.

The location of this tank within the Detrex Corporation facility is shown in Attachment J-1. **This accumulation tank has operated since December 1985** and may contain any of the hazardous wastes managed at the facility.

J-1a(3) Waste Handling Area

The receiving area, indicated on the facility plan in Attachment J-1, is utilized for the transfer of containers of wastes, received from off-site facilities, to the container storage area. It previously had also been used for the transfer of waste from the still bottoms tank to a tanker truck for off-disposal.

Waste drum handling practices includes the unloading of containers from a truck, using a forklift equipped with a drum handling attachment, and the transfer of these drums to the appropriate area in the container storage area after sampling.

The floor in the receiving area is free of all gaps or any other openings in the same manner as the container storage area.

J-1a(4) Waste Recycling Operation

As noted previously, this operation is in the process of closure as of this time. Attachment j-1 shows the location of the distillation stills used at the Facility.

The distillation process, during its active life, involved charging either drum or bulk hazardous waste into a batch distillation unit where the solvent content was removed. As solvent was recovered additional waste was added until the still contains essentially only "still" bottoms. At this point, the still bottoms were heated to a pre-determined temperature to reduce the solvent content further. After this final heating the still bottoms were transferred to the generator accumulation tank to await final disposal. The cycle was repeated over and over again until all of a similar waste (i.e., TCE) had been processed.

J-2 RELEASES

J-2A CHARACTERIZE RELEASES

Detrex completed a search of facility operating records which revealed only three releases which are known to have occurred at the Detroit Michigan facility. These incidents are discussed below.

None of the three incidents described above are considered likely to have created a potential impact to the environment (specifically surface water, soil or groundwater). Detrex responded quickly and effectively to each incident.

SECTION K

OTHER FEDERAL LAWS

TABLE OF CONTENTS

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LIST OF APPENDICES

APPENDIX K-1	COMPLIANCE LETTERS
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SECTION K

OTHER FEDERAL LAWS

Other Federal Laws which have been reviewed for compliance include the:

- Wild and Scenic Rivers Act;
- National Historic Preservation Act;
- The Endangered Species Act;
- The Coastal Zone Management Act;
- The Fish and Wild Life Coordination Act;
- NPDES.

Letters noting Detrex's compliance with the first three Acts will be placed into Appendix K-1 once received. Due to the physical location of the facility there will be no impact with regards to the Coastal Zone Management Act.

The facility discharges all of its rain water collected from the areas surrounding the facility to the City of Detroit via a Pretreatment permit. As such the facility does not have a NPDES permit.

SECTION L

**OWNER / OPERATOR
CERTIFICATION**

SECTION L

OWNER/OPERATOR CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature David R Crandell
Name David R Crandell
Title Division President
Date 12/20/96

#62

DETREX CORPORATION

LEAK DETECTION AND AIR MONITORING PROGRAM

12886 EATON AVENUE, DETROIT, MI 48227

MID 091 LOS 972



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 07 1995

REPLY TO THE ATTENTION OF.

HRP-8J

CERTIFIED MAIL P 851 379 095
RETURN RECEIPT REQUESTED

Mr. Issa Shamiyeh
Director of Risk Management
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: Information Request Subpart AA and BB
Detrex Corporation, Detroit, Michigan
MID 091 605 972

Dear Mr. Shamiyeh:

The United States Environmental Protection Agency (U.S. EPA) is requesting updated information regarding compliance with the Organic Air Emission Standards for Process Vents (40 CFR 264 Subpart AA) and for Equipment Leaks (40 CFR 264 Subpart BB). Specifically, the U.S. EPA is requesting the information outlined in Attachment I to this letter for all process vents and equipment at the Detroit, Michigan facility that is subject to Subparts AA and BB.

Please submit the information outlined in Attachment I within 30 days of receipt of this letter. If you have any questions regarding the attachment, please contact me at (312) 886-6151.

Sincerely,

Shari Sutker, Geologist
Michigan Section
RCRA Permitting Branch

Enclosure

cc: Ronda Blayer (MDNR)
Jeanette Noechel (MDNR-Livonia)

*This letter was received by I. Shamiyeh
on 06/14/95.*

Issa H. Shamiyeh



ATTACHMENT I

Information Request for Subpart AA and BB
Detrex Corporation
Solvents and Environmental Services Division
Detroit, Michigan, MID 091 605 972

Subpart AA: Air Emission Standards for Process Vents

1. Process vent information required by 40 CFR 264.1035(b)(2)^{A)} and
B) 40 CFR 264.1035(f).✓
2. Control device information required by 40 CFR 264.1035(b)(3),
B) 40 CFR 264.1035(b)(4) and 40 CFR 264.1035(c)^{A)}✓
C)
3. Certification statements as required by 40 CFR 264.1035(b)(4)(iv)^{A)}✓ and
B) 40 CFR 264.1035(b)(4)(v).✓

Subpart BB: Air Emission Standards for Equipment Leaks

4. Equipment information required by 40 CFR 264.1064(b)(1)^{A)}✓,
B) 40 CFR 264.1064(d), C) 40 CFR 264.1064(g), D) 40 CFR 264.1064(j),
E) 40 CFR 264.1064(k) and F) 40 CFR 264.1064(m).✓
5. Control device information required by 40 CFR 264.1064(b)(3)^{A)}✓,
B) 40 CFR 264.1064(b)(4), and C) 40 CFR 264.1064(e) which includes the
information required by 40 CFR 270.25(e)(1)-(3).✓
6. Valve information required by 40 CFR 264.1064(h)^{A)} and 40 CFR 264.1064(i).✓
B)
7. Certification statements as required by 40 CFR 270.25(e)(4) and
B) 40 CFR 270.25(e)(5).✓
✓

TABLE OF CONTENTS

Information Request for Subpart AA and BB
Detrex Corporation
Solvents and Environmental Services Division
Detroit, Michigan, MID 091 605 9

Subpart AA: Air Emission Standards for Process Vents

1. A) Process vent information required by: 40 CFR 264.1035 (b) (2)
B) Process vent information required by: 40 CFR 264.1035 (f)
2. A) Control device information required by: 40 CFR 264.1035(b) (3)
B) Control device information required by: 40 CFR 264.1035 (b) (4)
C) Control device information required by: 40 CFR 264.1035 (c)
3. A) Certification statements as required by: 40 CFR 264.1035 (b) (4) (iv)
B) Certification statements as required by: 40 CFR 264.1035 (b) (4) (v)

Subpart BB: Air Emission Standards for Equipment Leaks

4. A) Equipment information required by: 40 CFR 264.1064 (b) (1)
B) Equipment information required by: 40 CFR 264.1064 (d)
C) Equipment information required by: 40 CFR 264.1064 (g)
D) Equipment information required by: 40 CFR 264.1064 (j)
E) Equipment information required by: 40 CFR 264.1064 (k)
F) Equipment information required by: 40 CFR 264.1064 (m)
5. A) Control device information required by: 40 CFR 264.1064 (b) (3)
B) Control device information required by: 40 CFR 264.1064 (b) (4)
C) Control device information required by: 40 CFR 264.1064 (e)
D) Control device information required by: 40 CFR 264.1064 (e) (1) - (3)
6. A) Valve information required by: 40 CFR 264.1064 (h)
B) Valve information required by: 40 264.1064 (l)
7. A) Certification statements as required by: 40 CFR 270.25 (e) (4)
B) Certification statements as required by: 40 CFR 270.25 (e) (5)
8. Applicable regulations from 40 CFR.

DETREX CORPORATION
LEAK DETECTION
AND AIR MONITORING PROGRAM

DETREX CORPORATION

Leak Detection and Monitoring Program

Introduction

Detrex Corporation operates T.S.D. - Facility located at 12886 Eaton Avenue, Detroit, MI 48227 (Mid 091605972). The Facility is permitted for treatment, storage, and disposal of hazardous Waste. The Facility processes Hazardous Waste on-site and the waste codes that are processed are F001 and F002, which include:

- 1,1,1-Trichloroethylene
- Methylene Chloride
- Tetrachlorethylene
- Trichloroethylene
- Trichlorotrifluoroethane
- Trichloromonofluoromethane

The Processing Equipment which contains or contacts a waste stream have one or more of the components in the stream where the vapor pressure is greater than 0.3 Kilopascals (Kpa) at 20° C. Based on these data, the Processing Equipment is now to be in Light Liquid Service.

The following sections detail our understanding and implementing of the Leak Detection and Monitoring Program.

Project Description

Based on the Environmental Protection Agency's Requirement of 40 CFR 264 and 265; Subpart AA-Air Emission Standard for process vents and subpart BB-Air Emission Standards for Equipment Leaks, Detrex Corporation Solvents and Environmental Services Division, Engineering Department provided Environmental Testing assisting in compliance with Resources, Conservation, and Recovery Act (RCRA) regulations governing the control and monitoring of Emissions from Hazardous Waste Treatment Storage and Disposal Facility.

Scope of Work

Detrex Corporation assigned an Experienced Professional Engineer to provide Supervision and monitoring during the Field testing activities. An Experienced Engineer was assigned to perform visual inspection and instrument Emissions monitoring on all Emissions Sources, including pumps, valves, pressure relief devices, sampling connecting systems, and open ended lines associated with the solvent distillation system up to the point at which the waste solvent was declared a new product.

The Leak Detection Monitoring Procedure used is U.S. EPA method 21 - Determination of Volatile Organic Compounds Leaks (40 CFR Part 60).

At the end of each day of leak detection monitoring, a list of leaking equipment was provided to the plant manager so that repairs can be made as soon as practicable.

Testing Equipment (On Site Instruments)

GASTech "TraceTechtor" serial No: DT053 is designed specifically for monitoring and determination of traces amounts of hydrocarbon vapor levels. An accurate high sensitivity /high stability Catalytic Sensor provides detection over three ranges of 0-100, 100-1000 and 1,000-10,000 ppm(parts per million).

Test Method and Procedures

Operations TraceTechtor

1. Attach hydrophobic filter, hose and probe to the inlet fitting on front of instrument.
2. Turn rotary switch to Battery Check position and allow 5 minutes warm-up. Meter reading should be above the Battery check mark on the meter.
3. Test that Flow System is fully functional by placing finger over inlet and verify that Low Flow Alarm activities.
4. Adjust Zero action after a five minute warm-up, or when reading in ppm range has stabilized, adjust the External Zero knob to obtain a "0" reading. This is done with selector switch in the ppm range, and with the probe sampling from a gas free location.
5. Calibration of the Trace-Techtor was checked periodically to assure proper response. Hexane was the recommended Calibration gas to use.
6. Turn Selector Switch to desire range.

Procedure

Based on the requirement of 40 CFR 264 (265) Subpart BB, Detrex Corporation Engineering Department assigned Experienced Engineers for conducting the following:

- Placed a unique identification tag number to each piece of equipment that will be monitored under this program.
- Identify pumps which are required to be monitored as per the requirements of Subpart BB.
- Identify pressure relief devices, which are required to be monitored as per the requirement of Subpart BB.
- Identify sample connecting systems, which are required to be operated as per 40 CFR 264.1055 - (a) - (c).
- Identify open ended lines and valves.
- Identify valves in gas/vapor or in light liquid service.

Conclusion:

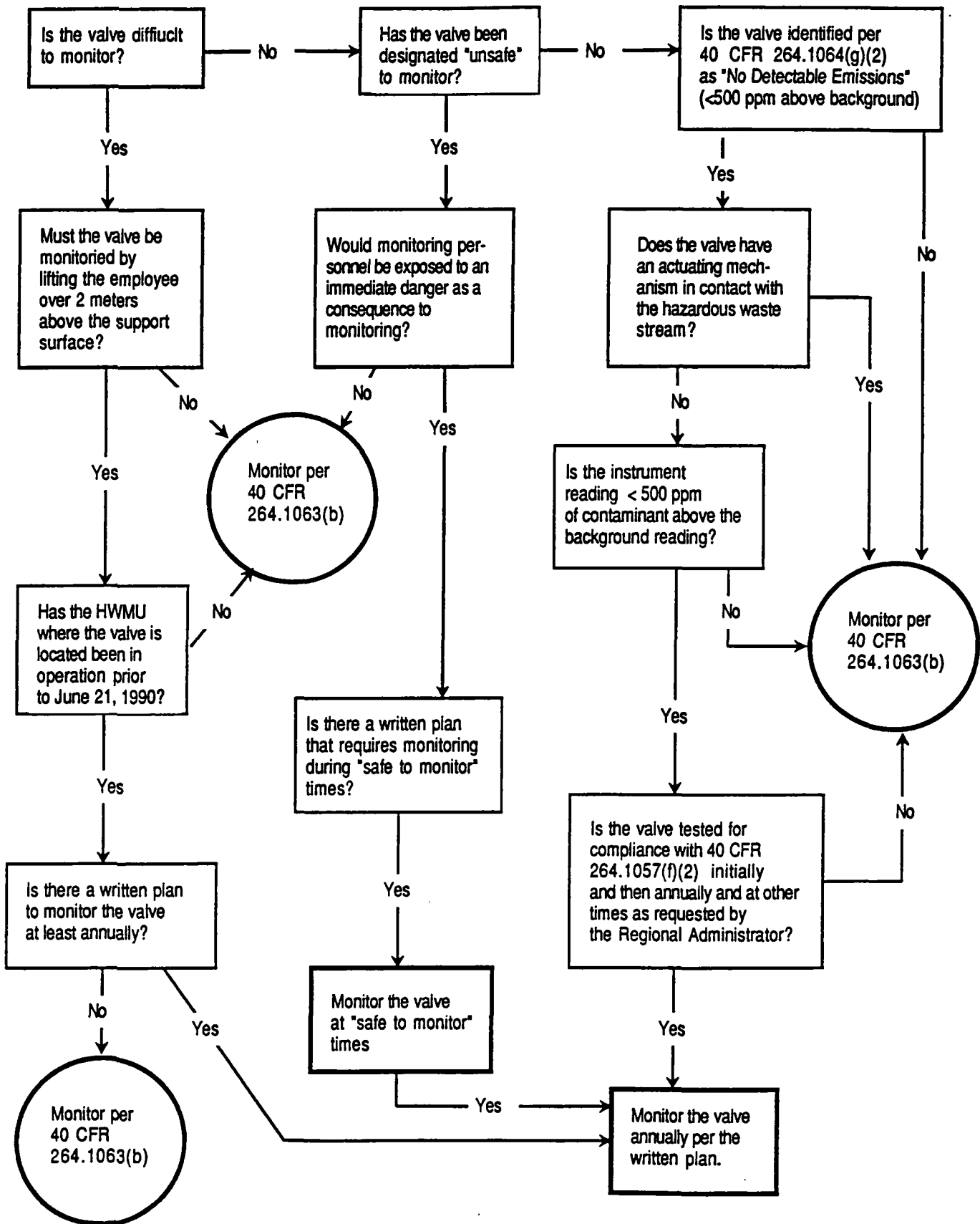
Treatment, storage and disposal facility located at 12886 Eaton Avenue, Detroit, MI is in compliance with the requirements of 40 CFR 264 SubParts AA and BB. The initial Leak Detection Monitoring program performed using visual inspection and instrument emissions monitoring on all emissions sources including pumps, valves, pressure relief devices, sampling connecting systems, and green ended lines associated with the solvent distillation system up to the point at which the waste solvent was declared a new product.

The facility will comply with the record keeping requirements. The record will be maintained in a readily accessible location at the facility site. The record will include all test results, measurements, calculations, and other documentation used to determine the leak detection and air monitoring tests.

Appendix 1

Valve Monitoring Rationale

Valve Monitoring Procedure and Rationale



- I. A **Detrex Corporation conducted a survey of the facility for the purpose of determining which equipment would be considered to be in light liquid service. During the survey affected process vents were also identified. Each piece of equipment then had a permanent tag, with a unique Identification number, attached to it.**

The following list represents the above mentioned equipment.

Detroit Branch AA/BB

Date:

Page 1

Test Number:

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
001		2" T ,Drum pump discharge.			
002	2" Stockham Ball Valve	Drum pump discharge Valve.			
003		2" Dump Pump line : Elbow and Tee.			
004		2" Drum Pump line manifold :Two Tees			
005		2" Drum Pump manifold line to Tank #17:Elbow end union.			
006		2" Drum Pump manifold line to Tank #22:Elbow and union.			
007	2" Stockham Ball Valve	Drum pump discharge valve to Tank #17.			
008	2" Legend Ball Valve	Drum pump discharge valve to Tank #12.			
009	2" Jamesbury Ball Valve	Drum pump discharge valve to Tank #22.			

Complete By: _____ Date: _____ Time: _____

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
010		2" Drum pump discharge line: overhead tee and elbow to Tank #17.			
011		2" drum pump discharge line: overhead cleanout tee.			
012		2" Clean Out: Tee			
013		2" Drum pump discharge line: overhead elbow to Tank #12.			
014		2" Drum pump discharge line: overhead elbow to Tank #22.			
015		2" at top of Tank #22: Tee and Union			
016		2" at top of Tank #22: Two tees and Union.			
017		2" reducing coupling and 1 1/2" elbow at top of Tank #22 from Detrex Still.			
018		1 1/2" Detrex Still discharge line to Tank #22: overhead elbow located top of Detrex still #14.			

Complete By:_____Date:_____Time:_____

Detroit Branch AA/BB

Date:

Page 3

Test Number:

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
019		1 1/2" top of Detrex Still #14 Discharge line to Tank #12: Elbow and Union.			
020		1 1/2" top of Detrex Still #14 discharge pipe to Tank #17: overhead elbow			
021		1 1/4" top Detrex Still #14 fill line from Tank #22: overhead elbow.			
022		1 1/2" Top east side Detrex Still #14 Feed Line from Tank #12: overhead elbow.			
023		1 1/2" Detrex Still #14 Feed line from Tank #22: overhead coupling.			
024		1 1/4" Detrex Still #14 Feed line from freed pump Tank #22: overhead elbow and check valve.			
025		1" Detrex Still #13 fill line from Tank #22: overhead elbow.			
026		1" Detrex Still #13 fill line from Tank #22: overhead coupling.			
027		1 1/4" Detrex Still #14 fill line from Tank #22: overhead coupling.			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/Bf

Date:	Page 4
Test Number:	

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
028		1" Detrex Still #13 fill line from Tank #22: overhead coupling.			
029		1" at Detrex Still #13 fill line from Tank #22: elbow.			
030		1" at top Detrex Still #13 fill line from Tank #22: overhead coupling.			
031		1 1/4" at Detrex Still #13 fill line from Tank #12: elbow.			
032		1 1/2" Detrex Still #14 drain line to Tank #17: elbow and coupling.			
033		3/4" steam line to Tank #22 discharge: elbow and union.			
034		3/4" steam line at Tank #22 discharge: two elbows.			
035	2" Stockham Ball Valve	Top valve discharge Tank #22.			
036	2" Stockham Ball Valve	Bottom valve discharge Tank #22			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/BF

Date:

P 5

Test Number:

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
037		2" at discharge Tank #22: union and tee.			
038		2" at discharge Tank #22: elbow and union.			
039		2" from discharge Tank #22: coupling.			
040		2" discharge reducing coupling to 1 1/4" union pump suction line Tank #22.			
041		1 1/4" Feed pump Detrex Still #14 from Tank #22: coupling.			
042		1 1/4" discharge line from feed pump to Detrex Still #14: union.			
043	1 1/4" Stockham Ball Valve	Feed pump valve to Detrex #14.			
044		1 1/4" Feed pump line Detrex Still #13: Elbow and union.			
045		1 1/4" Feed pump line Detrex Still #13: tee.			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/BI

Date:	P	6
Test Number:		

<u>Tag Number</u>	<u>Valve Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
046		1 1/4" check valve feed pump Detrex Still #13.			
047		1 1/4" Feed pump line Detrex Still #13: union.			
048	1 1/4" Apollo Ball Valve	Feed pump valve Detrex Still #13.			
049		2" Feed pump line from Tank #22 to DCI #24: union.			
050		2" Discharge line Tank #22 to DCI #24: Elbow "south wall"			
051	2" Apollo Ball Valve	Discharge valve Tank #22 to DCI #24 on the south wall.			
052		2" Discharge line Tank #22 to DCI #24: Two elbows "south wall"			
053	3" Hammond Gate Valve	Detrex Still #14 drain valves.			
054		3" Detrex Still #14 drain line: elbow "south wall"			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/BF

Date:	Pr	7
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
055		2" Detrex Still #14 drain line: union "south wall"			
056		2" Detrex Still #14 drain line to DCI #24: tee and elbow "south wall"			
057	2" Apollo Ball Valve	At Detrex Still #14 drain line to DCI #24			
058		2" Detrex Still #14 drain line to drain pump: tee			
059	2" Apollo Ball Valve	Detrex Still #14 drain line to DCI #15	.		
060	2" Apollo Ball Valve	Detrex Still #14 drain line to drain pump			
061		2" Detrex Still #14 drain line above valve #059: elbow			
062		2" Drain pump drain line, east of valve #060: Two elbows and union			
063		2" Drain pump line Detrex Still #13: Tee and union			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B**Date:****8****Test Number:**

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
064		2" Drain pump line Detrex Still #13 on the south wall: elbow			
065		2" Drain pump line to Detrex Still #13: Elbow and tee			
066	2" Wallworth Gate Valve	Detrex Still #13 drain valve. Note: Small amount of liquid & steam seal - tighten			
067		1/2" Detrex Still #13 drain line connected to steam line: elbow and union			
068		1/2" Detrex Still #13 drain line to steam line: elbow.			
069		1/2" Steam line from Detrex Still #13 drain line union			
070		1/2" Steam line from Detrex Still #13 drain line: tee. and 1/2" gate valve			
071		1/2" Steam line from Detrex Still #13 drain line: union and tee			
072		2" Detrex Still #13 drain outlet			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/B

Date:	I	9
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
073		2" Detrex Still drain pump: two elbows			
074		Detrex Still drain pump inlet			
075		Pump stuffing box			
076		2" Detrex Still drain pump line: elbow and union			
077	2" Apollo Ball Valve	Detrex Still drain pump			
078		Detrex Still drain pump line basket strainer			
079		2" outlet from the basket strainer: elbow and union			
080		2" outlet from the basket strainer: elbow			
081		2" Detrex Still drain pump line below valve #083: Tee			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B

Date: / 10

Test Number:

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
082		2" Detrex Still drain pump line below valve #085: elbow and tee			
083	2" Apollo Ball Valve	Detrex Still drain pump line to DCI #15			
084	2" Apollo Ball Valve	Detrex Still drain pump line to Tank #12			
085	2" Legend Ball Valve	From Detrex Still drain pump to Tank #22			
086		2" Drain line above valve #085.			
087		2" Detrex Still #14 outlet on the east side: Elbow and Tee			
088		1 1/4" Detrex Still #14 outlet on east side: Elbow and Tee			
089	2" G.L. gate valve	Detrex Still #14 outlet on east side Note: Small amount of liquid & steam seal - tighten			
090	2" G.L. gate valve	Detrex Still #14 on the east side			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/B/

Date:	P	11
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
091		1 1/4" Detrex Still #14 east side feed line: union			
092		2" Elbow southwest wall feed pump line Tank #22 to DCI Still #24: Elbow			
093		2" Elbow Southwest wall feed pump line to DCI #15. From Detrex Still #14: Elbow			
094		2" Coupling from Detrex Still #14 to DCI #15: Coupling			
095		2" Elbow from Detrex Still #14 drain line to DCI #24: Elbow			
096		2" Coupling from Detrex Still #14 drain line to DCI #24: coupling "west wall"			
097		2" Union Tank #22 feed line to DCI #24: Union			
098		2" Elbow from Detrex Still drain line to DC I #15: Elbow			
099	1 1/2" Stockham Ball Valve	From Tank #22 at DCI #15			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B

Date:	F 12
Test Number:	

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
100		1 1/2" Union and elbow next to valve #99: Union and elbow			
101		1 1/2" at DCI #15 pump inlet: Elbow and tee			
102	1 1/2" Stockham Ball Valve	Tank #22 isolation valve			
103		1 1/2" from Tank #22 line to isolation valve: Tee			
104		1 1/2" near to valve #105: Tee and elbow			
105	1 1/2" Apollo numeric ball valve	DCI #15 valve			
106		1 1/2" after valve #102: Union and Tee			
107		1 1/2" at DCI #15 feed back pump: Tee			
108		1/2" on feed pump recirculation line union			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/B

Date:	F	13
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
109	1 1/2" Apollo numeric ball valve	At DCI #15 recirculation valve			
110		1 1/2" opposite of valve #109: Union and elbow			
111		1 1/2" from DCI #15 drain line: Elbow reducing coupling			
112		1 1/2" at DCI #15 pump flexible coupling: Union			
113		1 1/2" DCI #15 recirculation line: Two elbows			
114		1 1/2" DCI #15 recirculation line at inlet: Union			
115		2" at DCI #15 inlet: Tee and elbow			
116		2" at valve #117: Union			
117	2" Apollo Ball Valve	DCI #15 steam valve			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/BL

Date:	F	14
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
118		1 1/4" DCI #15 pump "wilden M4"			
119		1 1/2" just before the DCI #15 flexible coupling and elbow			
120		1/2" Tank #12 middle gauge glass: Top elbow			
121		1/2" Tank #12 top gauge glass: bottom valve			
122		1 1/2" north of valve #124: Elbow			
123		1/2" Tank #12 middle gauge glass: Top valve			
124	1 1/2" Apollo Ball Valve	From Tank #12 to DCI #15			
125		1 1/2" pass elbow #122: Reducing coupling			
126		2" from Tank #12 before Tank #22 pump: Tee and elbow			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B

Date:	P	15
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
127	1 2" Stockham Ball Valve	Suction valve Tank #12 Pump			
128		2" from Tank #12 drain line at the west wall: TEE			
129	2" Apollo Ball Valve	Tank #12 drain line to DCI #24			
130	2" Milwaukee Ball Valve	South of valve #129 at the west wall			
131		2" south of valve #130: Elbow with cap			
132		2" Tank #12 drain line near the basket strainer: Two elbows			
133		2" Tank #12 drain line before the basket strainer: Union and elbow			
134		2" Drain line located south side of Tank #12			
135		Tank #12 basket strainer in the south side Note: Small amount of liquid & seal - Check seal/tighten			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/Bf

Date:	P. 16
Test Number:	

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
136		Between valve #138 and valve #137			
137		2" Top ball valve located south of Tank #12 for drain line			
138		2" Bottom ball valve drain line located at the south side of Tank #12			
139		1/2" Tank #12 bottom sample port ball valve			
140		1/2" Tank #12 lower gauge glass: Bottom tee and fitting			
141		1/2" Tank #12 lower gauge glass: Bottom valve Note: Appears to be liquid @ gauge glass seal - check seal			
142		1/2" Tank #12 lower gauge glass: upper gate valve			
143		1/2" Tank #12 lower gauge glass: upper fitting			
144		1/2" Tank #12 middle gauge glass: sample valve and Tee			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B1

Date:	P. 17
Test Number:	

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
145		1/2" Tank #12 middle gauge glass: Lower elbow and valve			
146		2" from Tank #22 to DCI #24: Coupling "located on the west wall behind Tank #12"			
147		2" Detrex Still #14 drain line to DCI #24: Coupling			
148		1/2" Tank #12 upper gauge glass: Lower elbow			
149		1/2" Tank #12 upper gauge glass: sample valve and Tee			
150		1/2" Tank #12 upper gauge glass: lower coupling			
151		1/2" Tank #12 upper gauge glass: upper valve and elbow			
152		2" from Tank #22 drain line located on the west wall near DCI #24: Union			
153		2" from Detrex Still #14 drain line located on the west wall Union?			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B

Date:	F	18
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
154		2" from Detrex Still #14 drain line on the west wall			
155	2" B.K. Ball Valve	From Detrex Still drain line on the west wall, behind DCI #24			
156	2" Stockham Ball Valve	End of the line from Tank #22 to DCI #24			
157	2" Stockham Ball Valve	End of the bottom line from Detrex Still #14 drain line to DCI #24			
158		2" DCI #24 manifold: Two tees and elbow			
159		2" from DCI #24 drain line on the west wall: Elbow and union.			
160	1 1/2" Apollo numeric ball valve	Out of the DCI #24 pump			
161		1 1/2" DCI #24 pump line: Tee and union			
162		1 1/2" DCI #24 pump line: Union			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/Bf

Date:	P	19
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
163		DCI #24 recirculation valve			
164		1 1/2" DCI #24 recirculation line: Union			
165		1 1/2" DCI #24 drain outlet: Two elbows			
166		1 1/2" DCI #24 drain outlet line: elbow			
167		DCI #24 pump			
168		1 1/2" DCI #24 pump line: Elbow and union			
169		DCI #24 Feed inlet flange			
170		1 1/2" tee and 2" reducing coupling out of the DCI #24 feed inlet flange			
171		2" DCI #24 feed inlet line: Two tees			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/BI

Date:	P	20
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
172		2" east of valve #173: union and elbow			
173	2" Apollo Ball Valve	Near the feed inlet flange DCI #24 Feed steam valve			
174		DCI #24 drain valve			
175		4" DCI #24 cleanout tee			
176		DCI #24 drain pump & outlet			
177	1 1/4" Apollo Ball Valve	DCI #24 drain sample port valve			
178		DCI #15 feed inlet flange (Put in list with 113 & 114)			
179		1 1/4" DCI #24 drain line sample port: Tee and reducing coupling			
180		2" DCI #24 drain line sample port: Union			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B

Date:	1	21
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
181		2" DCI #24 drain line sample port pressure gauge			
182		2" DCI #24 drain line sample port: Top elbow			
183	2" Stockham Ball Valve	DCI #24 drain valve sample port to Tank			
184		2" DCI #24 drain line above valve #183: Tee			
185		2" from DCI #24 drain line sample port to tank #17: Elbow "located west of valve #183"			
186		2" from DCI #24 drain line sample port to tank #17: Elbow "located directly above Tank #17.			
187		2" from DCI #24 drain line sample port to Tank #17: Union "above Tank #17"			
188		Tank #17 manway cover flange			
189		3" Tank #17 manway cover line: Tee and reducing coupling			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B[

Date:	P	22
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
190		2" vent pipe union above Tank #17			
191		2" processing pipe to Tank #17: Union			
192		2" processing pipe to Tank #17: Elbow			
193	2" Jamesbury Ball Valve	From top of Tank #17 to Liquitote system			
194		2" top Tank #17 to Liquitote: Elbow			
195		2" Tank #17 above the pump: manifold elbow			
196		3" from Tank #17 to the tan truck loading line: manifold elbow above pump #17			
197		3" from Tank #17 pump to tank truck loading line: elbow			
198		3" from Tank #17 pump to truck load line: coupling			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/E

Date:	23
Test Number:	

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
199		3" from Tank #17 pump to truck load line: coupling			
200		3" from Tank #17 pump to truck load line east of Tag #199: coupling			
201		3" truck load line east of tag #200: Tee Note: Leak at W. side of tee - tighten			
202		3" truck load line east of Tag #201: Elbow			
203		3" truck load line north of Tag #202: Elbow			
204		3" truck load line directly below Tag #203: Elbow			
205	3" B.S.	Truck load valve from Tank #17 located in the east wall.			
206		3" truck load line from Tank #17 located below valve #205: Union			
207		3" truck load line from Tank #17 located on the east wall: two elbows			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/B**Date:****24****Test Number:**

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
208		3" truck load line from Tank #17 located on the outside east wall: coupling			
209	3" Pegler Ball Valve	Tank #17 pump			
210	3" Pegler Ball Valve	Tank #17 pump			
211		3" Tank #17 pump line: Tee			
212		3" Tank #17 pump line: union			
213		Tank #17 pump			
214		3" out of Tank #17 pump: Tee and union			
215		3" Tank #17 pump line to the tote tank fill line: Tee			
216		3" Tank #17 pump line to the rail line: Tee			

Complete By:_____Date:_____Time:_____

Detroit Branch AA/E

Date:	25
Test Number:	

<u>Tag Number</u>	<u>Valve Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
217		3" out of Tank #17 pump to the truck load line: Tee			
218	1/2" Apollo Ball Valve	Tank #17 air purge			
219		1/2" south of valve #218: Tee			
220	1/2" Watts Ball Valve	Tank #17 sample valve			
221		2" Union Tank #17 pump line to tote tank fill line, located below valve #224: Union			
222		2" Union Tank #17 pump line to rail line, located below valve #225: Union			
223		3" Union Tank #17 pump line to truck load line, located below valve #226: Union			
224	2" Stockham Ball Valve	For the tote tank fill from Tank #17			
225	2" Stockham Ball Valve	For the rail line from Tank #17			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/E**Date:****26****Test Number:**

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
226	3" Siral Ball Valve	For the truck load line from Tank #17			
227		2" Tank #17 drum filling line: Elbow			
228	2" Valvmatic Ball Valve	Tank #17 drum filling valve			
229		1/2" Tank #17 lower gauge glass: Tee			
230	1/2" Valvmatic Ball Valve	Tank #17 bottom gauge glass			
231	1/2" Valvmatic Ball Valve	Tank #17 top gauge glass			
232		1/2" Tank #17 top gauge glass: Tee			
233		DCI #15 drain valve			
234		3" to DCI #15 pump: Union			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/B[

Date:	P	27
Test Number:		

<u>Tag Number</u>	<u>Valve Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
235		DCI #15 pump		All bolts tight,no action possible.	Replaced with new pump.
236		2" out of DCI #15 pump: Elbow	.		
237		2" out of DCI #15 pump drain line: Elbow			
238		2" drain line south of valve #239: Two tees and pressure gauge	.		
239	1" Ball Valve	DCI #15 drain line			
240		2" DCI #15 drain line north side tank: Two elbows and one union			
241		DCI #15 manway			
242		2" DCI #15 overhead cleanout Tee #1			
243		2" DCI #15 overhead cleanout Tee #2			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/**Date:**

a 28

Test Number:

<u>Tag Number</u>	<u>Valve Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
244		2" from DCI #15 drain line: overheadcoupling #1			
245		2" coupling from DCI #15 drain line to Tank #17: overhead coupling #2			
246		2" from DCI #15 drain line to Tank #17: overhead coupling #			
247		2" from DCI #15 drain line: overhead Elbow #1			
248		2" from DCI #15 drain line: Overhead Two elbows			
249		2" from DCI #15 drain line: Overhead Union #1			
250		2" from DCI #15 drain line located east wall: Overhead Tee and elbow			
251	2" B.K. Ball Valve	DCI #15 drain line to Tank #17 located on the east wall			
252		2" from DCI #15 drain line west of valve #251: Union #2			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/I

Date: _____, 29
Test Number: _____

<u>Tag Number</u>	<u>Valve Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
253	2" Stockham Ball Valve	From DCI #15 drain line east wall located north of valve #251			
254		2" from DCI #15 drain line located above the east side of Tank #17: overhead coupling			
255		Tank #12 pump located near the west wall Note: Pump seal dripped when pump was turned on. tighten seal flange/repair seal or replace.			
256		Tank #12 pump outlet			
257		1 1/4" Tank #12 discharge line: Tee, union and elbow			
258	1 1/4" Futton Ball Valve	Tank #12 discharge line to Detrex Still #14			
259	1 1/4" Apollo Ball Valve	Tank #12 discharge line to Detrex Still #13			
260		1 1/4" from Tank #12 discharge line to Detrex Still #13, located northwest of valve #259: Elbow			
261		1 1/4" from Tank #12 discharge line to Detrex Still #13: coupling			

Complete By: _____ Date: _____ Time: _____
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Detroit Branch AA/**Date:**

, 30

Test Number:

<u>Tag Number</u>	<u>Valve Size-Mfg-Type</u>	<u>Location Description</u>	<u>Average Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
262		1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead elbow #1			
263		1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead elbow #2			
264		1 1/4" from Tank #12 discharge line to Detrex Still #14: overhead elbow #1			
265		1 1/4" from Tank #12 discharge line to Detrex Still #14: overhead coupling			
266		1 1/4" from Tank #12 discharge line to Detrex Still #14: overhead elbow #2			
267		1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead coupling			
268		1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead elbow and coupling			
269		1 1/4" from Tank #12 discharge line to Detrex Still #13: Union	/		
270	1 1/4" Apollo Ball Valve	Discharge line at Detrex Still #13			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/**Date:****31****Test Number:**

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
271		1 1/4" at the end inlet Detrex Still #13: Elbow and tee fitting			
272	1" Watts Ball Valve	At the end inlet of Detrex Still #13			
273		1" at Detrex Still #13 fill line from Tank #22: union			
274		Tank #22 manway cover			
275	Stockham gate valve	Tank #22 manway cover			
276	1/2" Southside gate valve	1" toyto valve at Lower gauge glass at Tank #22			
277		1" Tank #22 lower gauge glass: Tee			
278		1" toyto valve at upper gauge glass at tank # 22			
279		1" at Tank #22 upper gauge glass: union			

Complete By: _____ Date: _____ Time: _____

Detroit Branch AA/f

Date:	F	32
Test Number:		

<u>Tag Number</u>	<u>Valve</u> <u>Size-Mfg-Type</u>	<u>Location</u> <u>Description</u>	<u>Average</u> <u>Reading</u>	<u>Five Day Action</u>	<u>Fifteen Day Action</u>
280		1/2" at Tank #22 lower gauge glass: upper elbow			

Complete By: _____	Date: _____	Time: _____
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I. B

The facility operates Monday through Friday from 8am to 5pm. Occasionally the facility may be open slightly longer or on a Saturday in order to perform additional tasks. The facility does not operate other than a single shift.

Actual data which indicates the throughput of waste stored or processed in various equipment are attached. (A Flow Diagram with equipment designations is also provided).

1b. PRODUCTION INFORMATION-THROUGHPUT

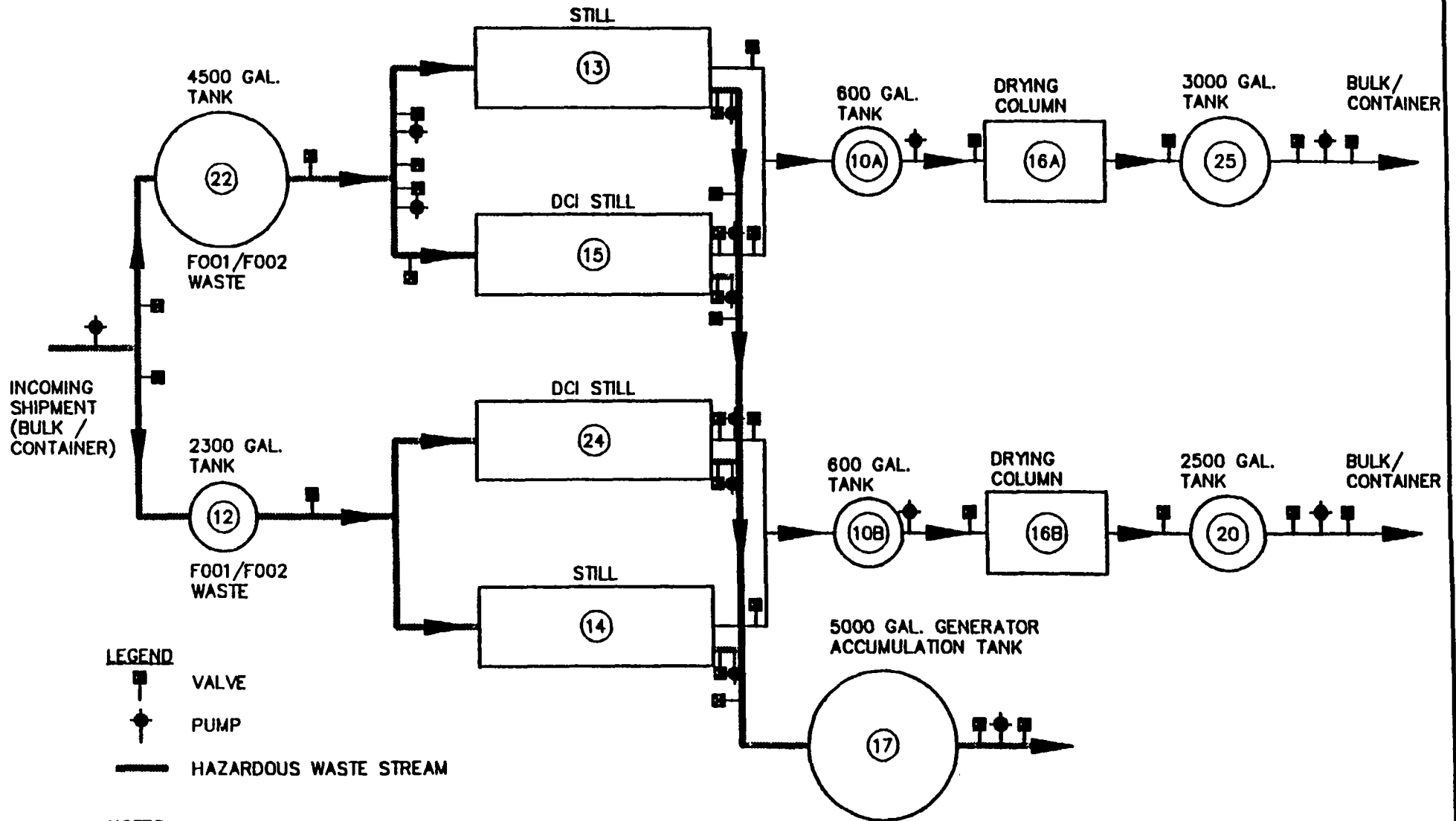
Source Number	Actual TCE Waste (gallons) *	Maximum TCE Waste (gallons)	Actual 1,1,1 Waste (gallons)	Maximum 1,1,1 Waste (gallons) *	Actual PCE Waste (gallons)	Maximum PCE Waste (gallons) *	Actual FC113 Waste (gallons)	Maximum FC113 Waste (gallons) *	Source Name
13	99,468	1,058,736	77,730	920,155	24,090	1,352,746	17,550	547,110	S-600 Still
14	66,312	705,824	51,820	613,437	16,060	901,831	11,700	364,740	S-350 Still
15	103,745 **	1,104,260	0	N/A	36,271 **	2,036,756	0	N/A	D-500 Still A
24	0	N/A	50,006 **	591,912	0	N/A	9,563 **	296,171	D-500 Still B
22	99,468	N/A	77,730	N/A	24,090	N/A	17,550	N/A	F001
12	66,312	N/A	51,820	N/A	16,060	N/A	11,700	N/A	F002
17	84,728	N/A	40,805	N/A	29,597	N/A	7,803	N/A	Still Bottoms Tank

* Indicates maximum processing rate if equipment were dedicated to this waste stream only.

** Indicates still bottoms from D-500 still and bottoms from processing S-600 / S-350 bottoms.

N/A Indicates not applicable for storage tanks which are operated 24 hours per day currently.

Drawing 7-7



NOTES :

DCI STILL - AUTOMATIC FEED

DETREX STILL - MANUAL FEED

TANK 22 IS OPERATED AS 3600 GAL. TANK

TANK 12 IS OPERATED AS 1900 GAL. TANK

(REVISED 09/03/91)

PROCESS FLOW DIAGRAM
Detrex Corporation
Eaton Avenue Facility, Detroit

I. C Estimated emission rates for each affected vents and the overall facility:

Detrex Corporation utilized throughput, production rates, and waste concentrations to perform engineering calculations which provided the estimated emission rates from the affected vents and the facility.

The maximum emission rate is based on the maximum operating rate of the affected equipment (and ancillaries such as pumps, etc.), pure solvent, and average annual temperatures based on summer conditions, and no emission controls.

The maximum annual emissions is based on the product of maximum emission rate and the actual annual time the equipment was utilized.

The average emission rate is based on the average actual concentration of the waste being processed, the emission rate at the actual average concentrations, and the actual time the equipment was utilized, all considering no emission controls on the equipment.

The actual annual emission rates were determined using the average emission rate as reduced due to emission controls.

A summary of these data are presented in the following tables.

1. C ESTIMATED EMISSION RATES

#DESCRIPTION	TRICHLOROETHYLENE EMISSIONS MAXIMUM LBS/HR	TRICHLOROETHYLENE EMISSIONS MAXIMUM LBS/yR	TRICHLOROETHYLENE EMISSIONS AVERAGE LBS/HR	TRICHLOROETHYLENE EMISSIONS ACTUAL TONS/YR
22 F001 Tank	11.56	101,266	6.127	0.0559
12 F002 Tank	4.00	35,040	3.019	0.0420
23 F002 Tank	0.67	5,869	0.1240	0.0241
10 Receiver Tank	7.385	64,693	0.3118	0.1696
20 Mixing Tank	3.692	32,342	0.8677	0.1696
17 Decant Tank	0.396	3,469	0.0047	0.00007
3 TCE Tank	12.35	108,186	0.0757 ¹	0.5425 ¹
4 1,1,1 Tank	0	0	0	0
PCE Tank	0	0	0	0
13 S-600 Still	2.40	21,024	0.1138	0.0007
14 S-350 Still	1.80	15,768	0.360	0.0004
15 D-500 DCI	4.82	21,024	1.0002	0.0114
24 D-100 DCI	2.40	42,223	0.1982	0.0023
Drumming Station	6.16	53,962	0.048 ²	0.0480 ²
TOTAL	57.633	504,865	11.928	1.0666

NOTES:

1. Based on operation 24 hours per day, 365 days per year.
2. Based on operation 15.8 hours per year averaged over 250 days per year and 8 hours per day.
3. Based on operation 33.9 hours per year averaged over 250 days per year and 8 hours per day.
4. Based on operation 11.6 hours per year averaged over 250 days per year and 8 hours per day.
5. Based on operation 10.7 hours per year averaged over 250 days per year and 8 hours per day.

#DESCRIPTION	1,1,1TRICHLOROETHANE EMISSIONS MAXIMUM LBS/HR	1,1,1TRICHLOROETHANE EMISSIONS MAXIMUM LBS/yR	1,1,1TRICHLOROETHANE EMISSIONS AVERAGE LBS/HR	1,1,1TRICHLOROETHANE EMISSIONS ACTUAL TONS/YR
22 F001 Tank	43.78	383,513	23.213	0.0228
12 F002 Tank	43.78	383,513	11.436	0.1383
23 F002 Tank	0.609	5,335	0.089	0.0263
10 Receiver Tank	19.72	172,747	0.838	0.4920
20 Mixing Tank	9.861	86,382	2.317	0.4920
17 Decant Tank	0.283	2,479	0.005	0.00005
3 TCE Tank	0	0	0	0
4 1,1,1 Tank	33.02	289,255	0.229	1.004
PCE Tank	0	0	0	0
13 S-600 Still	9.11	79,804	0.239	0.0029
14 S-350 Still	6.82	59,743	0.137	0.0017
15 D-500 DCI	18.26	159,958	3.789	0.0467
24 D-100 DCI	9.11	79,804	0.751	0.0093
Drumming Station	16.50	144,540	0.269 ³	0.2673 ³
TOTAL	210.85	1,847,046	43.229	2.5037

#DESCRIPTION	PERCHLOROETHYLENE EMISSIONS MAXIMUM LBS/HR	PERCHLOROETHYLENE EMISSIONS MAXIMUM LBS/yR	PERCHLOROETHYLENE EMISSIONS AVERAGE LBS/HR	PERCHLOROETHYLENE EMISSIONS ACTUAL TONS/YR
22 F001 Tank	2.100	18,396	1.113	0.0014
12 F002 Tank	2.100	18,396	0.548	0.0016
23 F002 Tank	0.814	7,131	0.168	0.214
10 Receiver Tank	2.330	20,411	0.099	0.0071
20 Mixing Tank	1.165	10,205	0.274	0.0071
17 Decant Tank	0.537	4,704	0.006	0.0001
3 TCE Tank	0	0	0	0
4 1,1,1 Tank	0	0	0	0
PCE Tank	4.200	36,792	0.001	0.0286
13 S-600 Still	0.437	3,828	0.012	0.00001
14 S-350 Still	0.327	2,865	0.007	0.00001
15 D-500 DCI	0.876	7,674	0.182	0.00028
24 D-100 DCI	0.437	3,828	0.036	0.00006
Drumming Station	1.970	17,257	0.011 ⁴	0.0108 ⁴
TOTAL	11.0175	96,513	2.456	0.27106

#DESCRIPTION	TRICHLOROTRIFLUORO- ETHANE EMISSIONS MAXIMUM LBS/HR	TRICHLOROTRIFLUORO- ETHANE EMISSIONS MAXIMUM LBS/yR	TRICHLOROTRIFLUORO- ETHANE EMISSIONS AVERAGE LBS/HR	TRICHLOROTRIFLUORO- ETHANE EMISSIONS ACTUAL TONS/YR
22 F001 Tank	113.78	996,713	60.30	0.1430
12 F002 Tank	113.78	996,713	29.71	0.0834
23 F002 Tank	0.920	8,059	0.183	0.357
10 Receiver Tank	48.008	420,550	2.040	0.2812
20 Mixing Tank	24.004	210,275	5.641	0.2812
17 Decant Tank	0.586	5,133	0.007	0.0001
3 TCE Tank	0	0	0	0
4 1,1,1 Tank	0	0	0	0
PCE Tank	0	0	0	0
13 S-600 Still	23.68	207,437	0.621	0.0018
14 S-350 Still	17.74	155,402	0.355	0.0009
15 D-500 DCI	47.44	415,574	9.844	0.0293
24 D-100 DCI	23.98	207,439	1.951	0.0058
Drumming Station	40.09	351,188	0.215 ⁵	0.2147 ⁵
TOTAL	453.70	3,974,412	110.867	1.3984

**Approximate Solvent Capacities per Module Based Upon Minimum 135 Minute Adsorb Cycle
With an Average Loading of Less than 1000 ppm on the Inlet Side**

Module Size	Gallons of Solvent
2.0	2-3
3.0	3-5
3.5	7-9
4.0	9-12
5.6	15-17
6.5	17-22

Module Size	Solvent	Pounds Absorbed per Bed
6.5	Trichloroethylene	207-268
6.5	1,1,1 Trichloroethane	190-246
6.5	Perchloroethylene	221-286
6.5	Trichlorotrifluoroethane	230-297

1. C ESTIMATED EMISSION RATES (1994 Operating Data).

#DESCRIPTION	TRICHLOROETHYLENE EMISSIONS MAXIMUM LBS/HR	TRICHLOROETHYLENE EMISSIONS MAXIMUM LBS/yR	TRICHLOROETHYLENE EMISSIONS AVERAGE LBS/HR	TRICHLOROETHYLENE EMISSIONS ACTUAL TONS/YR
22 F001 Tank	11.56	101,266	6.127	0.0539
12 F002 Tank	4.00	35,040	3.019	0.0404
23 F002 Tank	0.67	5,869	0.1240	0.0232
10 Receiver Tank	7.385	64,693	0.3118	0.1634
20 Mixing Tank	3.692	32,342	0.8677	0.1634
17 Decant Tank	0.396	3,469	0.0047	0.00006
3 TCE Tank	12.35	108,186	0.0757 ¹	0.5226 ¹
4 1,1,1 Tank	0	0	0	0
PCE Tank	0	0	0	0
13 S-600 Still	2.40	21,024	0.1138	0.0007
14 S-350 Still	1.80	15,768	0.360	0.0004
15 D-500 DCI	4.82	21,024	1.0002	0.0110
24 D-100 DCI	2.40	42,223	0.1982	0.0022
Drumming Station	6.16	53,962	0.048 ²	0.0462 ²
TOTAL	57.633	504,865	11.928	1.01746

NOTES:

1. Based on operation 24 hours per day, 365 days per year.
2. Based on operation 15.8 hours per year averaged over 250 days per year and 8 hours per day.
3. Based on operation 33.9 hours per year averaged over 250 days per year and 8 hours per day.
4. Based on operation 11.6 hours per year averaged over 250 days per year and 8 hours per day.
5. Based on operation 10.7 hours per year averaged over 250 days per year and 8 hours per day.

#DESCRIPTION	1,1,1TRICHLOROETHANE EMISSIONS MAXIMUM LBS/HR	1,1,1TRICHLOROETHANE EMISSIONS MAXIMUM LBS/yR	1,1,1TRICHLOROETHANE EMISSIONS AVERAGE LBS/HR	1,1,1TRICHLOROETHANE EMISSIONS ACTUAL TONS/YR
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12 F002 Tank	43.78	383,513	11.436	0.0167
23 F002 Tank	0.609	5,335	0.089	0.0031
10 Receiver Tank	19.72	172,747	0.838	0.0595
20 Mixing Tank	9.861	86,382	2.317	0.0595
17 Decant Tank	0.283	2,479	0.005	0.00000
3 TCE Tank	0	0	0	0
4 1,1,1 Tank	33.02	289,255	0.229	0.1215
PCE Tank	0	0	0	0
13 S-600 Still	9.11	79,804	0.239	0.0004
14 S-350 Still	6.82	59,743	0.137	0.0002
15 D-500 DCI	18.26	159,958	3.789	0.0057
24 D-100 DCI	9.11	79,804	0.751	0.0011
Drumming Station	16.50	144,540	0.269 ³	0.0323 ³
TOTAL	210.85	1,847,046	43.229	0.3028

#DESCRIPTION	PERCHLOROETHYLENE EMISSIONS MAXIMUM LBS/HR	PERCHLOROETHYLENE EMISSIONS MAXIMUM LBS/yR	PERCHLOROETHYLENE EMISSIONS AVERAGE LBS/HR	PERCHLOROETHYLENE EMISSIONS ACTUAL TONS/YR
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23 F002 Tank	0.814	7,131	0.168	0.0000
10 Receiver Tank	2.330	20,411	0.099	0.0000
20 Mixing Tank	1.165	10,205	0.274	0.0000
17 Decant Tank	0.537	4,704	0.006	0.0000
3 TCE Tank	0	0	0	0
4 1,1,1 Tank	0	0	0	0
PCE Tank	4.200	36,792	0.001	0.0000
13 S-600 Still	0.437	3,828	0.012	0.00000
14 S-350 Still	0.327	2,865	0.007	0.00000
15 D-500 DCI	0.876	7,674	0.182	0.00000
24 D-100 DCI	0.437	3,828	0.036	0.0000
Drumming Station	1.970	17,257	0.011 ⁴	0.0000 ⁴
TOTAL	11.0175	96,513	2.456	0.0000

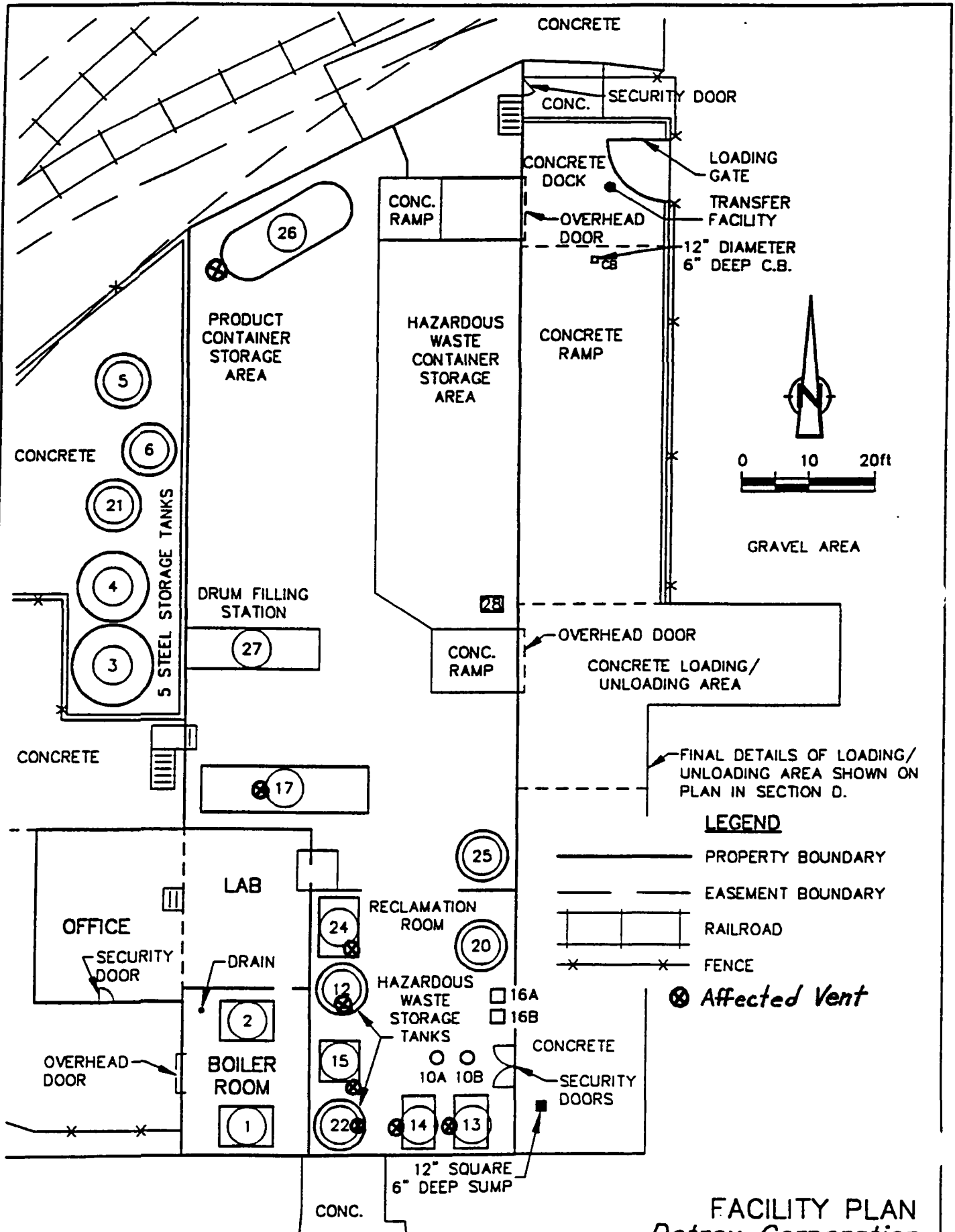
#DESCRIPTION	TRICHLOROTRIFLUORO- ETHANE EMISSIONS MAXIMUM LBS/HR	TRICHLOROTRIFLUORO- ETHANE EMISSIONS MAXIMUM LBS/yR	TRICHLOROTRIFLUORO- ETHANE EMISSIONS AVERAGE LBS/HR	TRICHLOROTRIFLUORO- ETHANE EMISSIONS ACTUAL TONS/YR
22 F001 Tank	113.78	996,713	60.30	0.6848
12 F002 Tank	113.78	996,713	29.71	0.1383
23 F002 Tank	0.920	8,059	0.183	0.5919
10 Receiver Tank	48.008	420,550	2.040	0.4662
20 Mixing Tank	24.004	210,275	5.641	0.4662
17 Decant Tank	0.586	5,133	0.007	0.0002
3 TCE Tank	0	0	0	0
4 1,1,1 Tank	0	0	0	0
PCE Tank	0	0	0	0
13 S-600 Still	23.68	207,437	0.621	0.0030
14 S-350 Still	17.74	155,402	0.355	0.0015
15 D-500 DCI	47.44	415,574	9.844	0.0486
24 D-100 DCI	23.98	207,439	1.951	0.0096
Drumming Station	40.09	351,188	0.215 ⁵	0.3560 ⁵
TOTAL	453.70	3,974,412	110.867	2.7663

**Approximate Solvent Capacities per Module Based Upon Minimum 135 Minute Adsorb Cycle
With an Average Loading of Less than 1000 ppm on the Inlet Side**

Module Size	Gallons of Solvent
2.0	2-3
3.0	3-5
3.5	7-9
4.0	9-12
5.6	15-17
6.5	17-22

Module Size	Solvent	Pounds Absorbed per Bed
6.5	Trichloroethylene	207-268
6.5	1,1,1 Trichloroethane	190-246
6.5	Perchloroethylene	221-286
6.5	Trichlorotrifluoroethane	230-297

- I. D The approximate location of each affected unit is shown on the facility plan attached.



II. Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control device based on engineering calculations or source test which demonstrate 95 w/w reduction at all vents:

Detrex Corporation purchased, installed, and connected to all vents at the facility a Detrex Model SVRM 2-6.5 - 3300 for control of V.O.C. emissions at the facility. The unit was installed complete with dual beds of granular activated carbon. Each bed contained 2,800 pounds of carbon. The unit was also furnished with metal oxide sensor technology for detection of V.O.C. concentration in the denuded gas stream. The denuded air monitoring instrumentation was installed and calibrated by Detrex Equipment Division personnel. The unit was set with low alarm at 50 ppm V.O.C. and high alarm at 100 ppm V.O.C.

The equipment was then tested using a known mass rate of V.O.C. injected (atomized) into the plenum of the control device. Prior to the test, the contaminated air volumetric flow rate into the control device was calculated. A separate monitoring device, a Miran 1A Infrared Spectrophotometer, was installed on the upstream side of the control device.

The test was conducted such that the concentration of V.O.C. contaminant was maintained at 950 to 1,000 ppm. During the testing procedure, Detrex personnel did not note an alarm at either the low or high alarm concentrations. (A copy of the strip chart is included in section 5). In fact, each day of the testing procedure an engineer checked the V.O.C. concentration in the denuded air stream with the Miran 1A unit. Concentrations from 2 to 19 ppm V.O.C. were noted, indicating a minimum 98% efficiency of the control device.

A listing of the affected vents, sizes and identification numbers is attached.

A typical analytical report of a typical sample of waste processed in the units is also attached.

Summary of Affected Vents
Detrex Corporation, Detroit Facility

<u>Vent Description</u>	<u>Vent Size</u>	<u>Vent ID #</u>
Detrex 5-350 Still, Unit 13	24" x 36"	v -13
Detrex 5-600 Still, Unit 14	18" x 18"	v -14
F001 Waste Tank, Unit 12	2"	v - 12
DCI D-500 Still, Unit 15	2"	v - 15
DCI D-500 Still, Unit 24	2"	v - 24
F001 Waste Tank, Unit 22	2"	v - 22
F002 Waste Tank, Unit 17	2"	v - 17

Detrex

CORPORATION

DETROIT LAB ANALYSIS REPORT

DATE 7/14/95

GENERATOR VAN KAY INC ^{EUCLO} SOLV TYPE Perk

DRUM # 2 JAIL # 10859-E

DATE REC'D 7/14/95 MANIFEST # MI 3910109

SPEC GRAVITY 1.400 ~ 70%

ROTOVAPOR DISTILLATION RESULTS

% YES 33/50 66 % NO 34

% LOSS ALLOW -5 ACTUAL YES 61

COMBUSTIBILITY SPOT TEST

NEGATIVE ☒ POSITIVE ☐ FLASHPOINT > 140

GAS CHROMATOGRAPHY SUMMARY

TYPE NA

DS

BC

RUN = 823

PERK 698 98.397

COMPATIBILITY ☒ YES ☐ NO

ADDITIONAL ANALYSIS (by request only)

WATER %

MOISTURE CONT

COMMENTS

ANALYST Ag

REV 12/25/94 12-1433

Detrex

CORPORATION

DETROIT LAB ANALYSIS REPORT

DATE

4-25-94

GENERATOR

Kaiser OPT

SOLV TYPE

Frown

DRUM #

1

LAB I.D. #

02-9961

DATE RECVD

4-25-94

MANIFEST #

1324157

SPEC GRAVITY

1.545

ROTOVAPOR DISTILLATION RESULTS

% YIELD

95

%NVR

5

PROC LOSS ALLOW

5

ACTUAL YIELD

90

IGNITABILITY SPOT TEST

NEGATIVE

POSITIVE

FLASHPOINT

>200 °F

GAS CHROMATOGRAPHY SUMMARY

COMPATIBILITY

(YES)

(NO)

ADDITIONAL ANALYSIS (by request only)

NAA

pH

MOISTURE CONT

COMMENTS

LT. Brown liquid

ANALYST

tah/ labsheet 12-14-93

Detrex

CORPORATION

DETROIT LAB ANALYSIS REPORT



DATE

3/31/95

GENERATOR

DPL

SOLV TYPE

FREON/141B

DRUM #

1

LAB NO. #

10632 GR (B)

DATE RECD

3/31/95

MANIFEST #

MI3908104(B)

SPEC GRAVITY

1.570 ~ 95%

ROTOVAPOR DISTILLATION RESULTS

% YIELD

%NVR

PROC LOSS ALLOW

ACTUAL YIELD

IGNITABILITY SPOT TEST

NEGATIVE

POSITIVE

FLASHPOINT

GAS CHROMATOGRAPHY SUMMARY

RUN TYPE

RT

%

TYPE

RT

%

COMPATIBILITY

(YES)

(NO)

ADDITIONAL ANALYSIS (by request only)

NAA

OR

MOISTURE CONT

COMMENTS

SHIPPED TO CHARLOTTE N.C. FOR ANALYTICAL Ag 4/1/95

ANALYST

Ag

DETREX SOLVENT LABORATORY, CHARLOTTE, NC**LABORATORY ANALYSIS REPORT**

LAB ID # 6945

DRUM 10632 GR (B)

BRANCH 02 DETROIT

GENERATOR DPL

THRU

SOLV TYPE

Freon

WT IN LBS

DATE RELEASED

DATE RECEIVED 4/6/95

OTOVAPOR TEST RESULTSEST. YEILD 92% YIELD 98.3ACT YEILD 93.3

PROCESS LOSS ALLOWANCE 5

% NVR 1.7

FLAMMABILITY TESTING

Ignitability Negative XX

Ignitability Positive

FLASH POINT OF >140

GC/MS CHROMATOGRAPHY RESULTS**COMPONENT****RAW PERCENTAGE****COMPONENT %**

Freon

99.5

92.8

141B

0.5

8.5

MISCELLANEOUS ANALYSES BY REQUEST ONLY

NAA

pH

Moisture Content

Heat of Combustion (BTU)

COMMENTS

N. IT R.E. Stahl

CONFIDENTIAL

DETREX INTER-OFFICE CORRESPONDENCE

BOWLING GREEN PLANT

DL

TO: R. Caudill/R. Adams

FROM: D. Gerard

CC: M. Milam, J. McChesney, R. Swan, R. Clement,
R. Ritchie, W. Nilsson, J. Scapelliti, File

DATE: 7-3-90

SUBJECT: SO 72656 - MODEL SVRM-2-6.5-3300 SPL
1,1,1-TRICHLOROETHANE TEST

Solvents Division Branch Reclamation Center
Eaton Avenue
Detroit, MI

Reference: Attached confidential report concerning test procedures for this four (4) week trial.

The following list reflects items that should be done concerning your visit on Thursday, July 5th.

- 1) Install distillate solvent sample valve on solvent outlet line of water separator.
- 2) Install check valve on metering pump outlet. As you know, during our test last week, we had steam back pressure problems through the pump and into the amonia drum.
- 3) Add two (2) 2" air operated condensate diverting valves on the outlet side of the dual heat exchangers.
- 4) Replace existing 25" diameter Manway plates with new plates as furnished by W. Nilsson.
- 5) Install corrosion coupons in carbon as directed by R. Swan. M. Milam had twelve (12) pieces of 304 stainless steel sent to Swan's attention last Friday, June 29th. Would you please check on the deposition of these 48" long pieces of stainless?
- 6) Install steam relief valve on main steam line. W. Nilsson advised me that this pop valve had not been installed.
- 7) Add couplings on entrance and exit ducts so that the Miran meter tubing can be inserted for monitoring the unit. These couplings should be at least 5 duct diameters away from the nearest fitting or connection.
- 8) Check air flow on entrance side of SVRM and reset for 2600 cfm.

CONFIDENTIAL

DETREX CORPORATION

Page 2

- 9) Check the existing starter on the metering pump. This should be a magnetic starter. It is our desire to control this pump from the PLC. Please contact Rick Ritchie if you have any questions concerning this change in the program.

The following is for your information:

Rick Ritchie will assist in the start-up of the unit on July 9th and 10th. He will make necessary changes in the program concerning the metering pump and by-pass during the ammonia injection. Again, if you have questions concerning electrical or PLC, please feel free to give him a call Thursday during your visit. He will not be in the office on Friday, July 6th.

Special Note: It is my understanding that the air operated valves have been located by Ron Swan. However, a coupling is missing from one valve. Wally will call the supplier today and have this coupling shipped UPS for arrival Thursday, a.m.

The attached report has some schematic drawings included which should aid you in the location of the valves, etc. I think Ron Swan understands exactly what is to be done and will be of great help to you. However, if you need my help by phone, please contact me as I will be in my office July 5th and 6th.


/sp

CONFIDENTIAL

DETREX INTER-OFFICE CORRESPONDENCE

BOWLING GREEN PLANT

TO: C. Stockmeyer

FROM:  D. Gerard

CC: Distribution List, File

DATE: 7-3-90

SUBJECT: CARBON ADSORPTION BETA SITE FOR 1,1,1-TRICHLOROETHANE

Reference: Meeting with Detrex and PPG Personnel on June 28th.

The following report reflects our decisions and procedures that were agreed upon during this meeting. The following lists summarizes our test procedures.

Test Time Frame:

Start July 9th - Concludes August 3rd

Test Personnel:

Dick Clement will be on site during the entire test. He will be responsible for monitoring and collecting samples. Ron Swan will work closely with Dick and assist him where necessary.

Clete Smith will be PPG's representative during the entire test. He will be on site on July 9th and I am unsure as to his intentions concerning the four (4) week period.

At this particular time two (2) technicians from our Service Department will visit the site Thursday, July 5th, to make necessary modifications that are required prior to starting on July 9th.

It will be necessary for a PLC Technician to be present on July 9th and 10th to change the program and to make sure the system is operating properly. I have checked with all available technicians and now have found it necessary to send Rick Ritchie to Detroit on these two dates to perform this function.

DISTRIBUTION: PPG - R. Yuravage
D. Reich
C. Smith

Detrex - J. Scapelliti
R. Clement
W. Nilsson
R. Swan
M. Tepatti
M. Milam
J. McChesney
K. Tedder
R. Ritchie

/sp

CONFIDENTIAL

DETREX CORPORATION

CONFIDENTIAL

CARBON ADSORPTION BETA SITE FOR 1,1,1-TRICHLOROETHANE

TEST CRITERIA

MODEL: SVRM-2-6.5-3300 SPL

MACHINE NO. 72656

DRAWING NO.: D-72656-GA

Submitted by Donald R. Gerard
July 3, 1990

The following test procedures were agreed upon at a meeting held at Detrex's Solvent Division Branch Reclamation Center in Detroit, MI on June 28, 1990.

The following personnel were present at this meeting:

PPG -	Mr. Robert Yuravage, Manager, Technical Service - Pittsburgh, PA
	Dr. Donald Reich, Coordinator Solvents Development - Lake Charles, LA
	Mr. Clete Smith - Technical Service - Pittsburgh, PA
DETREX -	Mr. Joe Scapelliti - National Sales Manager - Detroit, MI
	Mr. Richard Clement - SVRM Sales - Detroit, MI
	Mr. Donald R. Gerard - Dir. Eng. - Bowling Green, KY
	Mr. Wally Nilsson - SVRM Product Mgr. - Bowling Green, KY
	Mr. Ron Swan - Branch Manager - Detroit Reclamation Center

The following items should be done prior to starting the actual test.

- 1) Install distillate solvent sampling valve - This valve should be located on the solvent outlet line of the water separator. Note this valve specifically must be located prior to the distillate receiver entry. Our samples must be collected directly from the water separator outlet and not mixed with solvent in the receiver. (See attached sketch)
- 2) Install check valve on metering pump outlet - This check valve is required to stop back flow of steam through metering pump during desorb cycle. (See attached sketch)
- 3) Add condensate diverting valves on outlet side of the dual water cooled heat exchangers (condensers) - These 2" valves are to be air operated and will be controlled by the PLC. At the end of the normal desorption cycle, all steam condensate, that can possibly contain ammonia, must bypass the water separator. This condensate then must be diverted into a waste water holding drum. (See attached sketches)

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DETREX CORPORATION

Carbon Adsorption Beta Site for 1,1,1-Trichloroethane

Test Criteria

Page 2

- 4) Add easy access ports to top of 25" diameter manway plates located on top of each vessel. These ports are to be small diameter openings approximately 9" that will be bolted and gasketed. This will allow quick access to the carbon bed for placement of corrosion coupons.
- 5) Corrosion coupons - 48" long pieces of 16 gauge Type 304 stainless steel will be broken to form 1" x 1" angles. These pieces will be placed in each carbon bed in a vertical position. Corrosion can then be checked by merely withdrawing the angles from the carbon. They will be placed in the carbon through the small ports that are to be added to the 25" diameter manways. W. Nilsson will secure additional pieces of 316 stainless steel and monel for further corrosion tests.
- 6) Install steam relief valve. This valve should be added to the steam line that is located on the wall behind the modules.
- 7) Add 1" couplings on the inlet and outlet of the stainless steel exhaust ducts. These couplings will be used to place the Miran meter sampling tubes in position for monitoring inlet and outlet PPM. These couplings should be placed at least five (5) duct diameters from the nearest connection.
- 8) Reduce air flow - This unit is sized for a maximum of 3,300 CFM at a carbon face velocity of 100 feet per minute. This will be reduced to 80 feet per minute; thereby the CFM that will be introduced into this system during the test will be 2,600 CFM.
- 9) Install ductwork from drum station to main exhaust trunk.
- 10) Change PLC program as required.

Test Time Period -

July 9th - August 3rd - This test will be run for a period of four (4) weeks, five (5) days per week, eight (8) to ten (10) hours per day.

CONFIDENTIAL

DETREX CORPORATION

Carbon Adsorption Beta Site for 1,1,1-Trichloroethane

Test Criteria

Page 3

Test Personnel:

Detrex -

Dick Clement will be present during the entire test period and will be responsible for monitoring and collection of samples.

Ron Swan will be responsible for the facility and assisting Dick as required.

PPG -

Clete Smith will be available during the test period and will visit the site as required. He will be present during the start-up and the initial sampling period.

TEST PARAMETERS

Purpose:

- o To check the effectiveness of the ammonia injection system regarding its ability to reduce the amount of corrosion that will take place on the interior of the system during the desorption cycle.
- o To check the quality of the reclaimed 1,1,1-Trichloroethane Solvent and establish possible procedures for adding stabilizer so the solvent can be recycled.

Test Solvent:

All 1,1,1 Trichloroethane that is used for this test will be new solvent. Samples will be taken from each drum prior to introducing into the air stream. All reclaimed solvent will be handled by Ron Swan.

Ammonia Injection System:

This system has been fitted with a 1 hp turbine pump that is rated at approximately .66 GPM. It is provided with a suction hose that will withdraw from a barrel containing 28% ammonia. The initial injection time will be two (2) minutes at the conclusion of the normal steam desorb cycle.

Carbon Beds:

Each carbon bed is filled with special acid washed coal based carbon pellets. Each bed is charged with 2,800 pounds at a depth of 42".

Note: A sample of these carbon pellets was given to Dr. Reich to analyze for aluminum content.



DETROIT LAB ANALYSIS REPORT



DATE

3-9-94

GENERATOR

Rubber + Plastics

SOLV TYPE

Tol

DRUM #

2

LAB I.D. #

02-8869

DATE RECVD

3-9-94

MANIFEST #

377296

SPEC GRAVITY

1.345

ROTOVAPOR DISTILLATION RESULTS

% YIELD

83

%NVR

17

OC LOSS ALLOW

5

ACTUAL YIELD

78

IGNITABILITY SPOT TEST

NEGATIVE

POSITIVE

FLASHPOINT

>200°F

GAS CHROMATOGRAPHY SUMMARY

COMPATIBILITY

(YES)

(NO)

ADDITIONAL ANALYSIS (by request only)

NAA

pH

MOISTURE CONT

COMMENTS

Brown Liquid

ANALYST

tah/ labsheet 12-14-93



DETROIT LAB ANALYSIS REPORT

DATE

4-21-94

GENERATOR

Renew

SOLV TYPE

1.1

DRUM #

1

LAB I.D. #

02-9952

DATE RECD

4-21-94

MANIFEST #

2320317

SPEC GRAVITY

1290

ROTOVAPOR DISTILLATION RESULTS

% YIELD

95

%NVR

5

PROC LOSS ALLOW

5

ACTUAL YIELD

90

IGNITABILITY SPOT TEST

NEGATIVE

☒

POSITIVE

FLASHPOINT

2200°F

GAS CHROMATOGRAPHY SUMMARY

COMPATIBILITY

☒ (YES)

(NO)

ADDITIONAL ANALYSIS (by request only)

NAA

pH

MOISTURE CONT

COMMENTS

Light Brown Liquid

ANALYST

tah/ labsheet 12-14-93



DETROIT LAB ANALYSIS REPORT



DATE 2/24/95

GENERATOR WOLVERINE WORLDWIDE SOLV TYPE M/C

DRUM # 1 LAB I.D. # 10568 GR

DATE RECVD 2/24/95 MANIFEST # MI 3908056

SPEC GRAVITY 1.305 - 96% *

ROTOVAPOR DISTILLATION RESULTS

% YIELD 80 % NVR 20

FROO LOSS ALLOW -5 ACTUAL YIELD 75%

IGNITABILITY SPOT TEST

NEGATIVE ☒ POSITIVE ☐

FLASHPOINT 7140

GAS CHROMATOGRAPHY SUMMARY

TYPE	RT	%
M/C	4.33	95.732
BC	5.99	4.022

RUN # 349 RT %

COMPATIBILITY ☒ (YES) ☐ (NO)

ADDITIONAL ANALYSIS (by request only)

NAA _____ pH _____

MOISTURE CONT _____

COMMENTS

* High Solids in Liquid / PAINT AND OTHER DEBRIS - Grey Liquid
00795 009-04/ 1/95

ANALYST

Ag

tah/ labsheet 12-14-93

Detrex

CORPORATION

DETROIT LAB ANALYSIS REPORT

DATE

GENERATOR

SOLY TYPE

DRUM #

USE ID #

DATE REC'D

MANIFEST #

MI

SPEED GRAVITY

ROTOVAPOUR DISTILLATION RESULTS

% YIELD

50

% WVE

PROC LOSS ALLOW

-5

ACTUAL YIELD

IGNITABILITY SPOT TEST

NEGATIVE

POSITIVE

FLASH-POINT

>

GAS CHROMATOGRAPHY SUMMARY

TYPE

RT

%

Run =
TYPE

RT

%

NA

DS

BC

COMPATIBILITY

(YES)

(NO)

ADDITIONAL ANALYSIS (by request only)

NAA

DT

MOISTURE CONT

COMMENTS

ANALYST

Ag

L2W LabSheet 12-1-83

CONFIDENTIAL

DETREX INTER-OFFICE CORRESPONDENCE

BOWLING GREEN PLANT

TO: Don Gerard

FROM: Dick Clement

CC:

DATE: July 11, 1990

SUBJECT: SVRM PROJECT AT GOLD SHIELD - DETROIT

I picked up Rick Ritchie per your instructions at Detroit airport and we proceeded to Eaton Avenue. Rick reprogrammed the PLC to provide 53 minute desorb, 2 minute ammonia injection, and 5 minutes steam purge. The air up valves in the condensate line were previously installed by tech service and then were programmed to open and close at the proper time to prevent ammonia from going through the water separator and instead diverting it to a separate drum.

Ron Swan installed the new port covers with the small access ports. He also installed the stainless strips along with a normal strip sent down by Wally with the new covers.

All the other items on your list were completed. Ron also installed a solvent metering pump which he calibrated at 57 lbs. per hour which pumps 1,1,1-Tri-chloroethane from a drum directly into a 6" diameter duct.

He also adjusted the dampers on the other air feeder lines so that maximum flow will occur in the 1,1,1-Trichloroethane feed duct, but would allow enough air to enter the system so as not to starve the blower. Tuesday, a.m., July 10, we started the system and with an Alnor Velometer we borrowed from PIFCO, we were blowing approximately 4700 CFM out the exhaust stack. Later in the day, a similar velometer was returned that had been borrowed from Eaton Avenue, and the readings rechecked and read 3700 CFM -- so much for the accuracy of the Alnor Velometers. The 1,1,1 pump was started at 9:36 a.m. and was turned off at 12:06 p.m. just prior to the cool-down cycle, since we wanted uncontaminated air for the cool-down cycle. During the 150 minutes of operation, were pumped 115 lbs. of solvent into the system, at a rate of 46 lbs/hr - slightly below our desired amount.

Wednesday morning I met David Butler who gave me the Miran Meter and chart recorder. We also ordered the proper sized fan pulley to provide the desired CFM. Delivery is promised by noon Thursday, July 12. Wally advised against operating at the higher CFM, so no tests are being run at this moment.

A sample of water was taken at the end of the 7 minute purge cycle and there was still a strong odor of ammonia. A sample of solvent was taken and tested by Bob Yuravage of PPG with a litmus paper and it tested neutral. Bob suggested we increase the purge time and is checking with Don Reich.

CONFIDENTIAL

DETREX CORPORATION

R. Clement Memo

July 11, 1990

Page 2

We plan to go through a complete adsorb, desorb, and cool-down cycle tomorrow, Thursday, take samples and distribute them to the proper parties.

Don -- we are fortunate to have someone of Ron Swan's ability and willingness working on this project. His cooperation and contribution has been and is invaluable.

CONFIDENTIAL

DETREX INTER-OFFICE CORRESPONDENCE

BOWLING GREEN PLANT

TO: Don Gerard

FROM: Dick Clement

CC:

DATE: July 19, 1990

SUBJECT:

SVRM PROJECT AT GOLD SHIELD - DETROIT

After a 2 day delay, the proper pulleys, belts, etc. were acquired and installed. The ammonia concentration was reduced from 26% to .5% as recommended by Bob Yuravage of PPG. The first run was started Friday, July 13. The blower was exhausting approximately 2,800 CFM and the solvent feed pump adjusted to 950-1000 PPM. Solvent was being added at approximately 42 lbs/hr.

When the solvent pump was turned off, the tramp solvent odors in the warehouse were such that the PPM into the SVRM was 400-500. We closed two ducts going to the 1,1,1 storage tanks and still recorded 250-400 PPM. One test run in the evening when the stills were off and other normal warehouse activity suspended, the PPM dropped to 150-200.

The first official run was made Friday, July 13. Samples as recommended by PPG were taken and one set UPS to Don Reich of PPG. One set delivered to RTI and one set retained at Eaton Avenue as reference.

We have not been advised of the results. Attached sample key sheet explains the tests being taken.

The ammonia feeder pump was not primed properly and either pumped a minimum of ammonia or none into the bed. This problem was resolved.

CONFIDENTIAL

DETREX INTER-OFFICE CORRESPONDENCE

BOWLING GREEN PLANT

TO: Don Gerard

FROM: Dick Clement

CC:

DATE: July 26, 1990

SUBJECT:

SVRM PROJECT AT GOLD SHIELD - DETROIT

On Thursday, while I was at Bowling Green, July 19, 1990, Bob Yuravage called to advise that the samples of solvent taken on Friday, July 13, were in extremely poor condition. There was flock on top of the sample retained at Gold Shield. The results from PPG and RTI were not known at that time. Since then I received a report dated July 20 from RTI but nothing from PPG.

On Wednesday, July 18, a stainless steel coupon was taken from Bed # 1. Black smudge marks that could be the start of corrosion were observed. Because of the condition of the solvent from Run # 1, it was decided to neutralize the beds and schedule a meeting with PPG, and discontinue the tests until more information is exchanged at this meeting. The meeting was scheduled for July 30, evening and the day of July 31 (Monday and Tuesday) in Detroit.

On Wednesday, July 18, Run # 4 samples were taken and distributed as prescribed -- to day there are no results available.

On Friday, July 20, on my return from Bowling Green, we disconnected the blower (tramp PPM when solvent pump is off, was 250-400 PPM in the stack) the plan was to completely strip and neutralize the bed. Ammonia injection was included - ammonia concentration was increased to 26 - 28%.

On Tuesday, July 24, 1990, I desorbed both beds again with the blower off, including ammonia injection. The solvent in the water separator somehow disappeared and steam condensate filled the solvent distillate tank and was pumped into the drum designated for solvent. I then diverted the hose to the water drums.

After both beds were desorbed in this manner -- and during the steam purge after ammonia injection there was never an ammonia odor in the by-pass hose that was experienced during first trial run.

While waiting to re-wire the blower, a strong odor of ammonia was detected. The air suction ductwork running along the ceiling, was leaking profusely in several spots. Pails were placed under the leaks and water with the ammonia smell was collected.

We turned the blower on and ran another desorb cycle in each bed. The blower was allowed to run during the normal cool-down cycle.

CONFIDENTIAL

DETREX CORPORATION

R. Clement Memo

July 26, 1990

Page 2

On Thursday, July 25, the two access ports were opened and the stainless angle coupons were removed. There is definite corrosion on them. One of the coupons could not be pulled out - suggesting there might be some problems with the carbon. The carbon on top - down approximately 10" from where samples were taken, visually looks okay. The coupon that could not be removed was nearest the tank wall. A ring of brown corrosion approximately 3/4" high above the carbon was visible on the tank wall -- again -- this was a visual observation.

A sample of carbon taken from each bed will be delivered to RTI today.

CONFIDENTIAL

DETREX CORPORATION

Carbon Adsorption Beta Site for 1,1,1-Trichloroethane

Test Criteria

Page 4

CFM and PPM:

New 1,1,1 Trichloroethane shall be fed into the air stream at a controlled rate to equal 1,000 PPM when mixed with air at 2,600 CFM.

The following formula should be used for 1,1,1 Trichloroethane:

$$\text{Pounds per hour loss} = \text{PPM} \times \text{CFM} \times .00002207$$

$$\text{Therefore } 1,000 \times 2,600 \times .00002207 = 57.38 \text{ pounds per hour}$$

Adsorption Time and Working Capacity of the Carbon:

- As 1,1,1 Trichloroethane is consistently fed at the above rate, our calculations indicate that each carbon bed must be steam stripped approximately every four (4) hours.

This is based on the fact that each bed is charged with 2,800 pounds of carbon. Our calculations show that 1,1,1 Trichloroethane can be adsorbed into the carbon with a ratio at approximately 10% of the weight of the carbon.

Therefore, $10\% \times 2,800 = 280$ pounds of solvent that can be adsorbed into each bed.

$$\frac{280 \text{ lbs.}}{57.38 \text{ lbs. per hour}} = 4.87^* \text{ hours adsorb time}$$

*Actual experience has shown that optimum adsorption capacity very rarely is reached and therefore we estimate 4.0 hours for this test.

Bed Desorption and Drying Cycle:

The following 60 minute desorption (steam stripping) cycle will initially be used for this test:

o Steam Desorb at 10 PSI 53 minutes

Note: All steam/solvent condensate will be directed through the water separator and then to the distillate receiver.

Continued on the Next Page

CONFIDENTIAL

DETREX CORPORATION

Carbon Adsorption Beta Site for 1,1,1-Trichloroethane

Test Criteria

Page 5

- o Ammonia Injection into Steam Line 2 minutes

Note: Air operated diverting valves will now be actuated to allow all condensed steam condensate to bypass the water separator for direction into a waste water receiving drum.

- o Steam Injection at 10 PSI 5 minutes

Note: The purpose of this injection period will be to remove as much ammonia as possible from the carbon bed and interior ducting of the adsorption system. This condensate will be directed to the waste water receiving drum.

The following bed drying cycle will be used for this test:

- o Bed Drying Cycle 10 to 15 minutes of ambient air

Note: During the drying cycle, we are recommending no PPM be added to the incoming air stream. Normally, solvent laden air is used to dry a desorbed bed. However, in this case, if 1,1,1 Trichloroethane is introduced into a wet bed, this could result in the formation of a slight amount of acid.

Solvent and Water Samples:

Solvent Samples: All samples will be taken from the water separator/solvent outlet line. Three (3) solvent samples will be taken during the the desorb cycle as follows:

- o First sample after 15 minutes of desorb
- o Second sample after 30 minutes of desorb
- o Third sample after 45 minutes of desorb

Samples will be analyzed for pH, stabilizer depletion, and moisture content.

Water Samples: Samples will be taken from the water separator/water outlet line.

Water samples will be analyzed for the presence of iron and solvent content. W. Nilsson expressed some concern that boiler chemical treatment can cause problems during the desorption cycle. In order to see if this is a problem, the steam that will be used during the first strip cycle would be made up from tap water (no chemical treatment). The remaining desorption cycles then would use steam that had been treated from the boiler.

CONFIDENTIAL

DETREX CORPORATION

Carbon Adsorption Beta Site for 1,1,1-Trichloroethane

Test Criteria

Page 6

Deposition of Solvent and Water Samples:

PPG has requested that both solvent and water samples be taken from the first, fourth, and eighth desorption cycles. These 24 samples must be taken from the same carbon bed and forwarded to:

Dr. Donald Reich, PhD
PPG
Columbia Southern Road
Westlake, LA 70669

Detrex samples will be handled by Dick Clement, and in some cases, will be sent to RTI. RTI will be used when samples must be run quickly in order to evaluate our progress. Samples will be taken in the same manner as described above. During the initial phases of this test, samples will be taken daily. This will continue until some consistency is determined and at that time, Dick will make a decision as to how often samples will be taken.

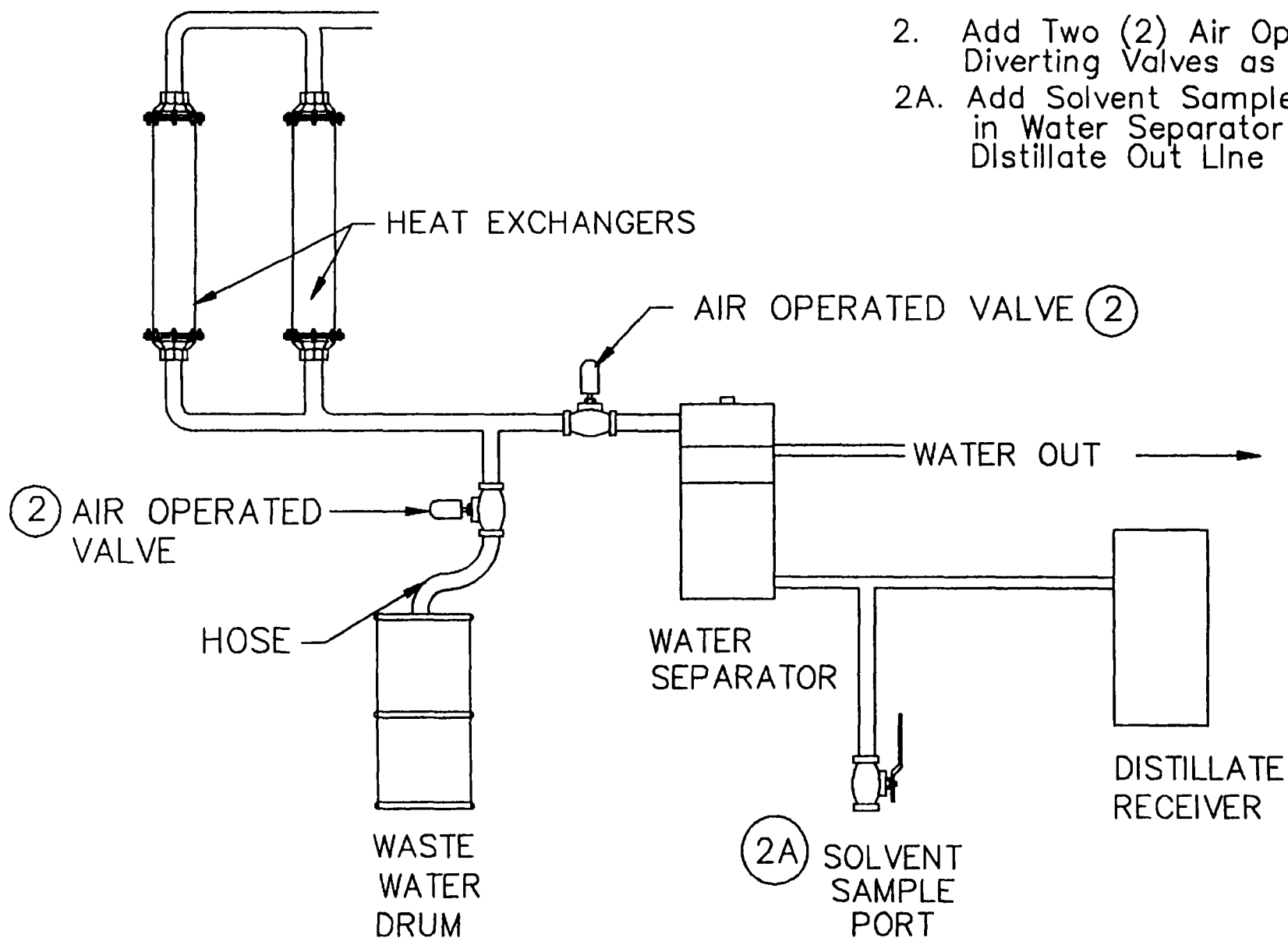
PPM Monitoring Points:

The Miran 1A and its chart recorder will continuously monitor the operation of this unit. This unit will be set up in close proximity to the SVRM with hoses attached to the entrance and exit ducts. R. Clement will be in charge of the Miran and its operation.

Other Test Procedures:

Bob Yuravage, of PPG, will review all items that have been discussed in this meeting. He then will furnish us with any other test parameters that may be required by PPG.

CONFIDENTIAL

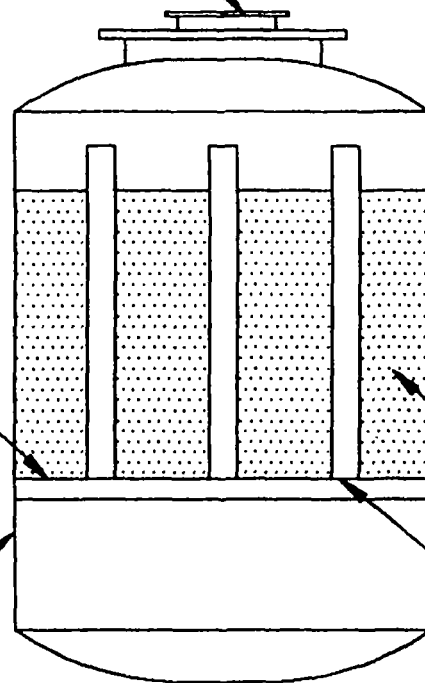


Condenser By-Pass System

③ ACCESS DOOR

SUPPORT SCREEN

CARBON VESSEL



3. Add Small Dia Lid
to Large Access Plate
on Top of Each Bed

4. Add 304 Stainless Steel
Test Coupons to
Check for Corrosion

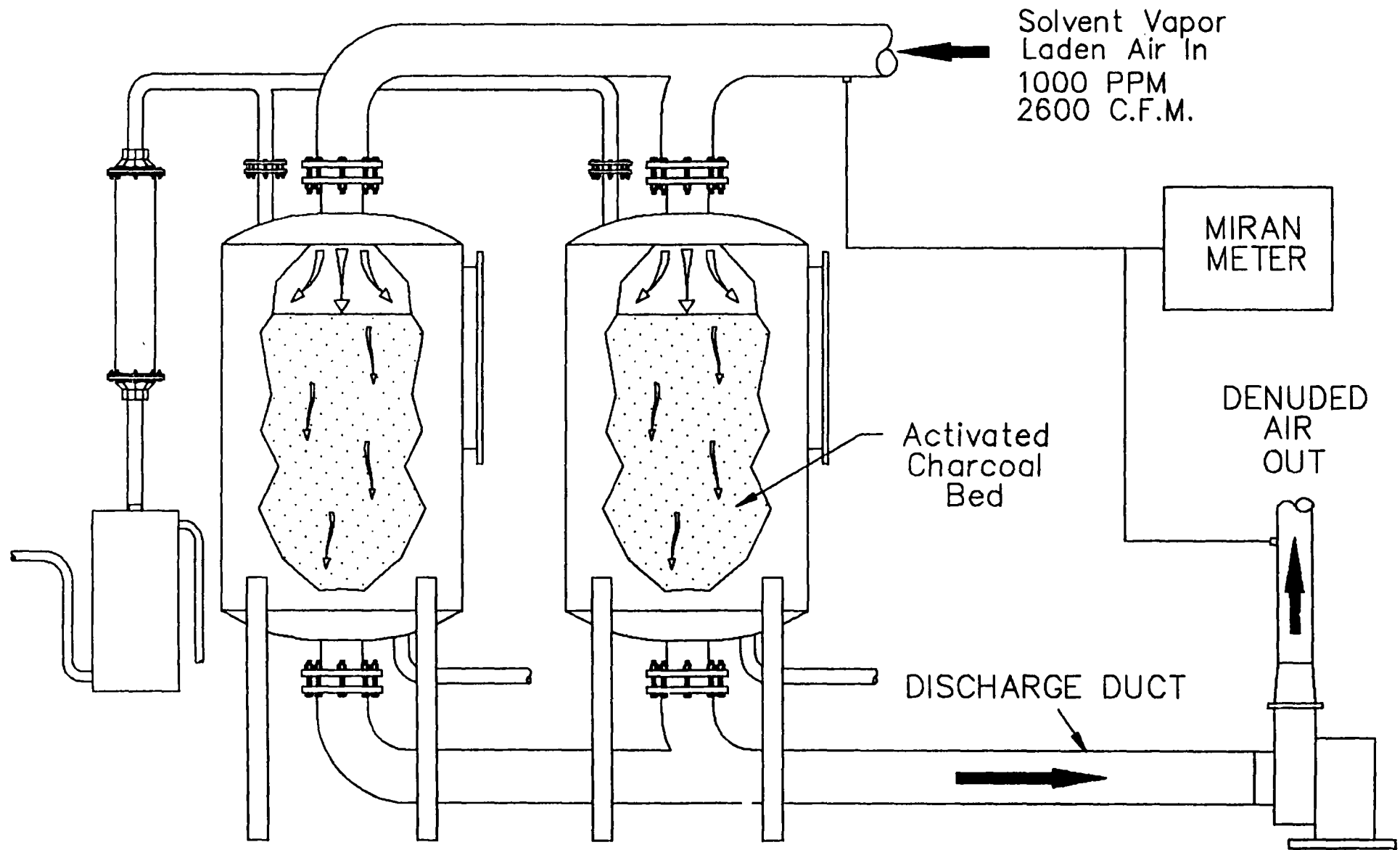
(12) pcs. 16 ga.
Stainless Steel Angle
(broken)— 1"x 1" X 48" lg.

Wally Nilsson to get
Monel Samples

5. Air Velocity = 80 LFM
 $(6.5 \text{ ft. dia}/2) \times \pi = 33 \text{ sq. ft.}$
 $80 \text{ F.P.M.} \times 33 \text{ F.P.M.} = 2640 \text{ C.F.M.}$

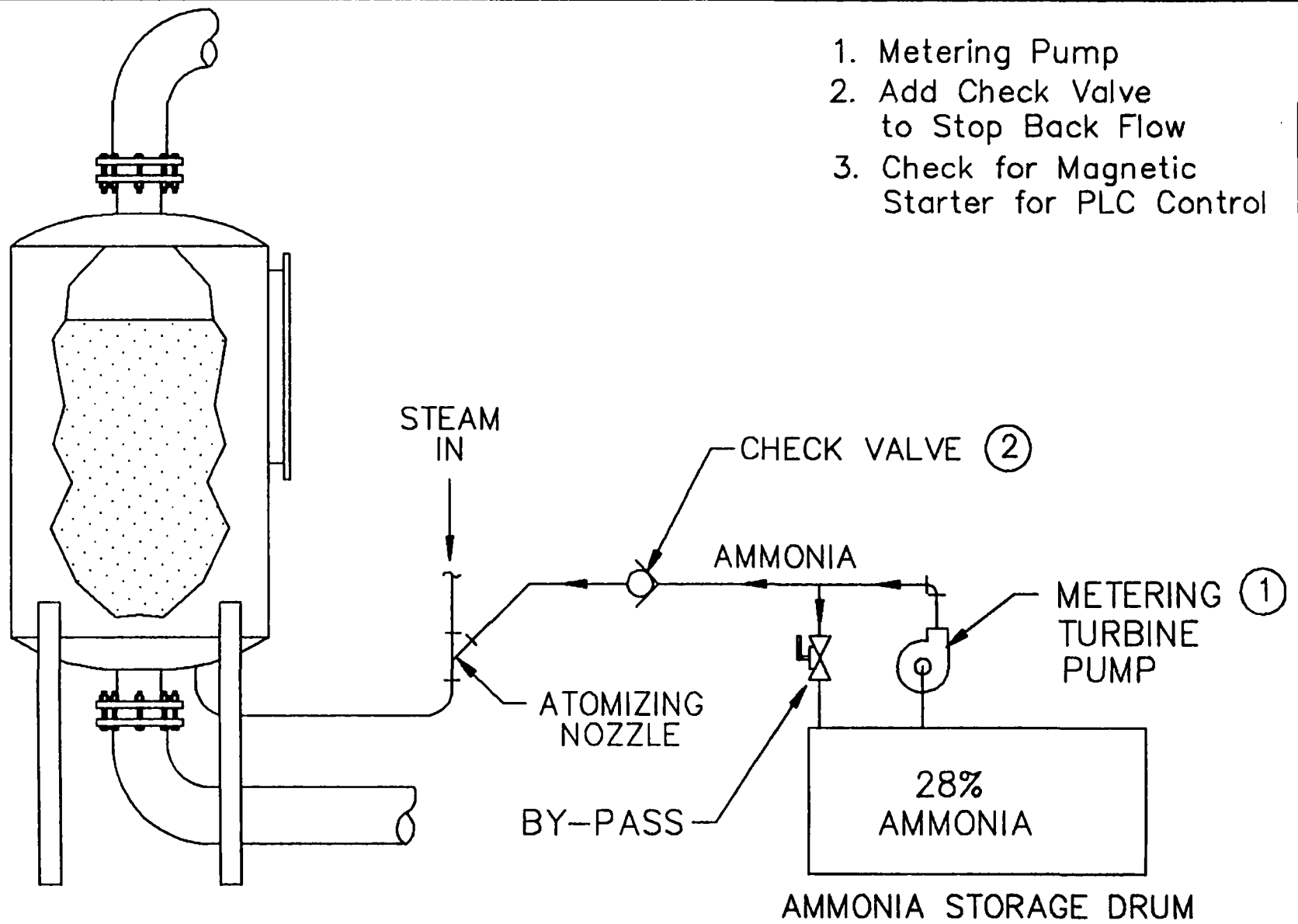
CARBON

TEST COUPONS ④



PPM Monitoring Piping

CONFIDENTIAL



Ammonia Injection System

II. A The requirements for control device information in 40 CFR 264.1035 (b) (3) do not apply since Detrex is complying with the requirements of 40 CFR 264.1035 (b) (2).

Record keeping requirements 40 CFR 264.1035 (b) (2):

(i) Information identifying affected units annual throughput, operating hours, estimated emissions and vent reductions achieved by add-on controls-

Affected Units - Since the original survey performed by Detrex, the equipment, and hence affected units have remained unchanged. A list of the affected units is found in section 1a.

Annual Throughput - The operating log is maintained in an electronic file at the facility. A copy of the summary of waste throughput for the most recent year, 1994, is found in Section II A.

Operating Hours - The facility continues to operate one shift, Monday through Friday from 8am to 5pm.

Estimated emissions - The estimated emissions for the most recent calendar year, 1994, are found in the summary tables given in Section 1c.

Vent Reductions - Since the volume, concentration, rate of processing and operating parameters of the control device are essentially the same as the original parameters, the control device is expected to be approximately 98% efficient.

REVISED 01-31-95

GENERATOR	DETREX CNTRL #	CUSTOMER MID #	MANIFEST #	NO./TYPE CONTAIN.	PHYS. (L/S)	MANIFEST QTY.	MAN. UNIT	DATE OF RECEIPT
OTOR PRODUCTS	9852	MID061868048	3088104	2 DM	L	110	G	03-04-94
INNELL SCREW	10285	MID 053634113	2634891	4 DM	L	200	G	10-06-94
BENT TUBE	9815	MID005397757	3177290	2 DM	L	110	G	02-17-94
SEALED PWR. - HARV. (G.R.)	9919	MID043682327	3251263	4 DM	L	220	G	04-06-94
AFM	9792	MID181420176	3351530	8 DM	L	400	G	02-16-94
AFM	10033	MID131420176	3351911	5 DM	L	275	G	06-03-94
STANDARD DIE	9816 A	MID985634203	3351583	4 DM	L	220	G	02-17-94
HI MILL MFG	10335	MID 005341714	3907212	3 DM	L	165	G	11-08-94
GRINNELL SCREW	10209	MID005363411	3907025	3 DM	L	150	G	08-31-94
SEALED PWR-KEATING (G.R.)	10110	MID060174125	3579588	3 DM	L	165	G	07-13-94
PORT CITY (G.R.)	9994	MID982066813	3156867	2 DM	L	110	G	05-11-94
HI-MILL MANUFACTURING	10091	MID053417142	3351940	3 DM	L	165	G	06-29-94
TRU HEAT CORP. (G.R.)	10219	MID065841215	1328547	3 DM	L	165	G	09-09-94
AFM	9875	MID131420176	2943032	8 DM	L	400	G	03-11-94
SEALED PWR - HARV (G.R.)	9957	MID043682327	3251270	3 DM	L	165	G	04-19-94
THOMPSON MCCULLY-BELLE	10070	MID052523768	3088121	2 DM	L	80	G	06-14-94
SEALED PWR-HARV (G.R.)	10014	MID043682327	3251278	4 DM	L	220	G	05-26-94
TEXAS INSTRUMENTS (G.R.)	9974	MID053668018	1870657	3 DM	L	165	G	04-29-94
BERRIEN TOOL (G.R.)	10229	MID985664739	3177730	3 DM	L	165	G	09-16-94
HATCH STAMPING	10257	MID005338603	3907181	10 DM	L	550	G	09-26-94
SEALED POWER G.R.	10316	MID 043682327	3724410	4 DM	L	220	G	10-28-94
TEXAS INSTRUMENTS (G.R.)	10359	MID 053668018	3748512	2 DM	L	110	G	11-17-94
TEXAS INSTRUMENTS (G.R.)	9907	MID053668018	1870654	3 DM	L	165	G	03-23-94
HILLSDALE TOOL & RUBBER	9901	MID000808979	3071513	2 DM	L	110	G	03-30-94
ERAL MOGUL (G.R.)	9971	MID005358783	3004098	3 DM	L	162	G	04-29-94
LOW PROFILE	9933	MID005390695	3351735	15 DM	L	750	G	04-13-94
THOMPSON MCCULLY-BELLE	10259	MID052523768	2775780	2 DM	L	95	G	09-29-94
KOPACZ	10087	MID061880803	3177084	2 DM	L	110	G	06-23-94
PORT CITY (G.R.)	10120	MID982066813	3156869	2 DM	L	110	G	07-21-94
KOPACZ	9902	MID061880803	3177082	2 DM	L	110	G	03-28-94
THOMPSON-MCCULLY-JACK	10152	MID380274224	3351397	2 DM	L	110	G	08-10-94
CME CORPORATION (G.R.)	9836	MID982627630	3352053	3 DM	L	165	G	02-24-94
GRINNELL SCREW	9896	MID005863411	3350916	4 DM	L	220	G	03-24-94
C & M COATINGS (G.R.)	10342	MID 006022305	3352370	2 DM	L	110	G	11-09-94
AMERIKAM (G.R.)	10360	MID 006011464	3177694	3 DM	L	150	G	11-17-94
BENT TUBE	10094	MID005397757	3088202	3 DM	L	165	G	06-29-94
SEALED PWR-HARV (G.R.)	10046	MID043682327	3251280	5 DM	L	275	G	06-10-94
HI-MILL MANUFACTURING	9949	MID053417142	3351802	3 DM	L	165	G	04-20-94
PALCO INC.	10164	MID086693798	3351986	4 DM	L	220	G	08-15-94
THOMPSON MC CULLY CO	10351	MID 052523768	3177197	2 DM	L	95	G	11-04-94
CADILLAC ASPHALT	9843	MID005321443	3350980	2 DM	L	110	G	03-04-94
TRUHEAT CORP (G.R.)	10419	MID 065841215	3475250	3 DM	L	152	G	12-13-94
NIAGARA (ESG)	9996	NYD048630230	3048481	2 DM	L	110	G	05-11-94
THOMPSON MCCULLY-CLARK	10211	MID980702690	3907014	2 DM	L	110	G	09-02-94
FEDERAL MOGUL (G.R.)	10113	MID005358783	3107165	5 DM	L	265	G	07-13-94
PORT CITY (G.R.)	9936C	MID982066813	3156865	1 DM	L	50	G	04-13-94
PALCO INC.	9795	MID096963798	2736026	5 DM	L	275	G	02-16-94
PORT CITY (G.R.)	9839	MID982066813	3156863	2 DM	L	110	G	02-25-94
SEALED PWR-HARVEY (G.R.)	10237	MID043682327	3479812	5 DM	L	275	G	09-21-94
CO INC.	10051	MID096963798	2736033	4 DM	L	220	G	06-07-94
SPIRAL INDUSTRIES	9851	MID048078984	2841758	3 DM	L	165	G	03-04-94
GENERAL FILTERS	9829	MID005318696	3177189	3 DM	L	165	G	02-21-94

CONFIDENTIAL

REVISED 01-31-95

GENERATOR	DETREX CNTRL #	CUSTOMER MID #	MANIFEST #	NO./TYPE CONTAIN.	PHYS. (L/S)	MANIFEST QTY.	MAN. UNIT	DATE OF RECEIPT
CM	10254	MID131420176	3907066	7 DM	L	440	G	09-24-94
LED POWER (G.R.)	9862	MID043682327	3251258	5 DM	L	275	G	03-09-94
A.S.P. MFG. (G.R.)	10037	MID051759082	3352171	5 DM	L	275	G	06-10-94
SCREW MACHINE (G.R.)	10226	MID006022123	954838	4 DM	L	220	G	09-16-94
JACKSON FLEXIBLE	10050	MIG000007541	2775944	2 DM	L	110	G	06-07-94
AMERIKAM (G.R.)	9986	MID006011464	1543287	3 DM	L	150	G	05-06-94
TEXAS INSTRUMENTS (G.R.)	10119	MID053668018	3748501	3 DM	L	165	G	07-21-94
WAYNE COUNTY	10312	MID 980613293	3907320	2 DM	L	110	G	10-25-94
PALCO INC.	9999	MID096963798	2736031	4 DM	L	220	G	05-11-94
FEDERAL MOGUL (G.R.)	10079	MID005358783	3107160	5 DM	L	275	G	06-22-94
FEDERAL MOGUL (G.R.)	9939	MID005358783	3004091	4 DM	L	200	G	04-13-94
ELASTIMOLD (G.R.)	9802	MID080356876	1724519	3 DM	L	165	G	02-09-94
MDOT MATERIALS (G.R.)	10077	MID981796303	1221591	2 DM	L	110	G	06-22-94
PIONEER TRANSFORMER	10233	OHD005853168	3907091	4 DM	L	220	G	09-19-94
AJAX - CLARK LAKE	9803	MID005985961	3177041	4 DM	L	220	G	02-08-94
KINTEX (ESG)	9998	NYD048385645	3048420	3 DM	L	165	G	05-11-94
ELECTRO CHEMICAL (G.R.)	10361	MID 980990113	1753707	2 DM	L	110	G	11-17-94
WC DEPT OF PUBLIC WORKS	9846	MID980613293	3351613	2 DM	L	110	G	03-02-94
SEALED PWR-HARVEY (G.R.)	10158	MID043682327	3251288	6 DM	L	330	G	08-11-94
THOMPSON MCCULLY-BELLE	10185	MID052523768	3351967	3 DM	L	95	G	08-24-94
PALCO DIV.	10374	MID 096963798	3351471	4 DM	L	220	G	11-15-94
AFM	10239	MID131420176	3907173	9 DM	L	495	G	09-21-94
PALCO INC.	9930	MID096963798	2736029	4 DM	L	220	G	04-13-94
MOTOR PROD	10443	MID 061868048	3909597	3 DM	L	165	G	12-28-94
YO CORPORATION (G.R.)	10013	MID985569318	1783847	3 DM	L	165	G	05-26-94
AS INSTRUMENTS (G.R.)	10190	MID053668018	3748504	3 DM	L	165	G	08-26-94
HOLLAND TRANS. (G.R.)	10227	MID006012090	3188488	3 DM	L	160	G	09-16-94
HILLSDALE TOOL	10331	MID 000809798	3088211	4 DM	L	220	G	11-01-94
NORTHERN PRECISION (G.R.)	10264	MID112821275	3177526	8 DM	L	440	G	09-29-94
HI-MILL MANUFACTURING	9804	MID053417142	3351575	3 DM	L	165	G	02-09-94
HILLSDALE TOOL	10104	MID000809798	3088296	3 DM	L	165	G	07-11-94
HILLSDALE TOOL	10267	MID000809798	3907185	5 DM	L	275	G	09-29-94
AFM	10207	MID131420176	3907019	9 DM	L	495	G	08-30-94
AFM	10117	MID131420176	3351910	13 DM	L	715	G	07-15-94
BENT TUBE	10201	MID005397757	3088203	4 DM	L	220	G	08-25-94
PALCO INC	10301	MID 096963793	2736041	4 DM	L	220	G	10-14-94
FEDERAL MOGUL (G.R.)	10017	MID005358783	3107158	6 DM	L	330	G	05-26-94
HATCH STAMPING	10184	MID005338603	3351483	8 DM	L	440	G	08-24-94
GRINNELL SCREW	10149	MID005363411	2634886	4 DM	L	220	G	08-08-94
PAINT WORKS	9889	MID095405403	3351690	4 DM	L	220	G	03-18-94
PALCO	10442	MID 896963798	3909752	5 DM	L	275	G	12-28-94
FEDERAL MOGUL (G.R.)	9823	MID005358783	3004079	6 DM	L	300	G	02-18-94
SCREW MACHINE (G.R.)	9860	MID066022123	954836	5 DM	L	275	G	03-09-94
GRINNELL SCREW	9931	MID005363411	2634884	4 DM	L	220	G	04-13-94
PORT CITY (G.R.)	10396	MID 982066813	3156878	3 DM	L	165	G	12-08-94
AAR BROOKS (G.R.)	9800	MID006019251	3060863	3 DM	L	220	G	02-09-94
TI COATINGS	10290	MIG 000019130	3907466	4 DM	L	200	G	10-07-94
TRU HEAT CORP. (G.R.)	9920	MID065841215	1328545	4 DM	L	220	G	04-06-94
OT MATERIALS (G.R.)	10228	MID981796303	1221589	3 DM	L	165	G	09-16-94
ALIED PWR-KEAT (G.R.)	9903	MID060174125	2646033	5 DM	L	270	G	03-25-94
AFM	10118	MID131420176	3351909	10 DM	L	550	G	07-16-94
MTI CORPORATION	10161	MID072775067	3351448	3 DM	L	165	G	08-11-94

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LCO INC.	9880	MID096963798	2736028	4 DM	L	200	G	03-17-94
(AS INSTRUMENTS (G.R.)	10043	MID053668018	1870660	4 DM	L	220	G	06-10-94
ASSEMBLY SERVICE (G.R.)	9859	MID144995545	3028522	4 DM	L	220	G	03-09-94
CHEM CENTRAL (G.R.)	10321	MID 017106192	3352355	6 DM	L	330	G	10-28-94
BENT TUBE	9990	MID005397757	3088201	4 DM	L	220	G	05-10-94
A F M	10311	MID 131420176	3907429	5 DM	L	495	G	10-20-94
YAMAHA MUSICAL INST (G.R.)	10136	MID985569946	3352253	3 DM	L	165	G	08-03-94
HILLSDALE TOOL & RUBBER	9789	MID000809798	3071519	4 DM	L	220	G	02-04-94
FAYETTE-IPG	10130	MID042158329	3088245	5 DM	L	225	G	07-28-94
FEDERAL MOGUL (G.R.)	9761	MID005358783	3004073	7 DM	L	385	G	02-01-94
PALCO INC.	10186	MID096963798	2736038	5 DM	L	250	G	08-24-94
SEALED POWER HYLIPT DIV	10341	MID 060174125	3352368	6 DM	L	330	G	11-09-94
GRINNELL SCREW	10395	MID 053634113	2634894	5 DM	L	275	G	12-07-94
A F M	10367	MID 131420176	3909502	6 DM	L	330	G	11-16-94
TEXAS INSTRUMENTS (G.R.)	10339	MID 053663018	3748510	4 DM	L	220	G	11-09-94
GRINNELL SCREW	10023	MID005363411	3351847	12 DM	L	600	G	05-19-94
TEXAS INSTRUMENT (G.R.)	10417	MID 053668018	3748513	4 DM	L	220	G	12-12-94
SEALED POWER (G.R.)	10400	MID 980499735	3479815	12 DM	L	660	G	12-08-94
HATCH STAMPING	10156 A	MID005338603	3351286	11 DM	L	555	G	08-10-94
HATCH STAMPING	10401	MID005338683	3909615	12 DM	L	660	G	12-09-94
PORT CITY (G.R.)	10171	MID982066813	3156870	4 DM	L	220	G	08-18-94
SEALED PWR-SAN (G.R.)	10047	MID980499735	3262494	9 DM	L	495	G	06-10-94
MDOT LANSING (G.R.)	10338	MID 981796303	3652650	4 DM	L	220	G	11-09-94

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LOW PROFILE	10116	MID005390695	3351323	17 DM	L	850	G	07-18-94
ERAL-MOGUL (G.R.)	9908 A	MID005358783	3004085	8 DM	L	432	G	03-25-94
HATCH STAMPING	10300	MID 005338603	3907389	7 DM	L	385	G	10-14-94
TEXAS INST., (G.R.)	10276	MID 053663018	3748506	6 DM	L	330	G	10-19-94
WOLVERINE WORLD. (G.R.)	9985	MID980825988	3352139	4 DM	L	220	G	05-06-94
FAYETTE-IPG	10232	MID042158329	3351361	8 DM	L	440	G	09-19-94
ASSEMBLY SERVICE (G.R.)	10078	MID144995545	3028523	5 DM	L	275	G	06-22-94
YAMAHA MUSICAL INST (G.R.)	10136	MID985569946	3352253	19 DM	L	1045	G	08-03-94
SEALED POWER (G.R.)	10279	MID 980499735	3479800	12 DM	L	660	G	10-19-94
SEALED PWR-HARVEY (G.R.)	9760	MID043682327	2747362	10 DM	L	550	G	02-01-94
FAYETTE-IPG	10058	MID042158329	3088237	6 DM	L	330	G	06-09-94
FAYETTE TUBULAR	110329	MID 042158329	3907297	7 DM	L	385	G	11-01-94
AGET MANUFACTURING	10048	MID005035175	3055702	6 DM	L	330	G	06-06-94
SEALED POWER (G.R.)	9840	MID980499735	3262462	12 DM	L	660	G	02-25-94
AFM	9988	MID131420176	3351867	17 DM	L	935	G	05-07-94
SEALED PWR.-SAN (G.R.)	9904	MID980499735	3262489	12 DM	L	648	G	03-25-94
FAYETTE-IPG	10266	MID042158329	3351358	7 DM	L	385	G	09-29-94
ELECTRO CHEMICAL (G.R.)	10121	MID980990113	3177508	6 DM	L	300	G	07-21-94
AAR BROOKS & PERKINS G.R.	10319	MID 006019251	3060896	8 DM	L	440	G	10-28-94
AFM	10199	MID131420176	3088329	15 DM	L	825	G	08-27-94
U.S. GRAPHITE	10386	MID 085033173	3909574	14 DM	L	770	G	12-02-94
FAYETTE TUBULAR PROD	10302	MID 042158329	3351851	8 DM	L	440	G	10-17-94
SEALED PWR-SAN (G.R.)	10015	MID980499735	3262493	12 DM	L	660	G	05-26-94
FAYETTE TUBULAR	10410	MID 042158329	3909648	9 DM	L	495	G	12-13-94
ETTE-IPG	9925	MID042158329	3088234	6 DM	L	330	G	04-11-94
KOYO CORPORATION (G.R.)	10076	MID985569318	1783848	6 DM	L	330	G	06-16-94
FAYETTE-IPG	10088	MID042158329	3088236	8 DM	L	440	G	06-24-94
SEALED POWER MUSKEGON	10340	MID 980499735	3479814	12 DM	L	660	G	11-09-94
SEALED PWR-SAN (G.R.)	10195	MID980499735	3262499	12 DM	L	660	G	08-26-94
YAHAMA MUSICAL INST (G.R.)	9835	MID985569946	3177747	9 DM	L	495	G	02-25-94
FAYETTE-IPG	10105	MID042158329	3088238	8 DM	L	440	G	07-11-94
SEALED PWR - SAN (G.R.)	9956	MID980499735	3262490	13 DM	L	715	G	04-19-94
FAYETTE-IPG	10176	MID042158329	3351360	11 DM	L	550	G	08-18-94
SEALED PWR-SAN (G.R.)	10141	MID980499735	3262496	13 DM	L	715	G	08-05-94
FAYETTE-IPG	10204	MID042158329	3351362	12 DM	L	660	G	08-29-94
SEALED PWR-SAN (G.R.)	10097	MID980499735	3262495	15 DM	L	825	G	06-30-94
HATCH STAMPING COMPANY	9787	MID005888603	3351559	12 DM	L	660	G	02-04-94
SEALED POWER-SAN (G.R.)	10249	MID980499735	3262500	14 DM	L	770	G	09-23-94
AAR BROOKS (G.R.)	9941	MID006019251	3060874	8 DM	L	440	G	04-13-94
KOYO CORPORATION (G.R.)	10358	MID 985569318	1783850	13 DM	L	715	G	11-17-94
FAYETTE-IPG	10144	MID042158329	3351359	10 DM	L	550	G	08-05-94
PROFESSIONAL METAL (G.R.)	9838	MID985588930	3352058	13 DM	L	650	G	02-25-94
FEDERAL MOGUL (G.R.)	9857	MID005358783	3004083	11 DM	L	605	G	03-09-94
KOYO CORPORATION (G.R.)	9822	MID985569318	1783846	9 DM	L	495	G	02-18-94
FAYETTE TUBULAR PROD	10282	MID 042158329	3907494	13 DM	L	650	G	10-04-94
A F M	10352	MID 131420176	3907224	22 DMS	L	1210	G	11-12-94
PROFESSIONAL METAL G.R.	10317	MID 985568930	3908005	13 DM	L	715	G	10-28-94
DETREX-EUCLID	10020 A	OHD080158702	3088095	23 DM	L	1265	G	05-20-94
REX-EUCLID	10177	OHD080158702	3351084	28 DM	L	1540	G	08-19-94
...C-SHELDON	10178	MID044253029	2673247	79 DM	L	3950	G	08-19-94
A F M	10426	MID 131420176	3909552	21 DMS	L	1050	G	12-19-94
FAYETTE TUBULAR	10379	MID 042158328	3909507	14 DM	L	770	G	

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ETTE-IPG	10068	MID042158329	3351852	14 DM	L	720	G	06-14-94
O CORPORATION (G.R.)	10220	MID985569318	1783849	11 DM	L	605	G	09-09-94
FMC-SHELDON	9897 A	MID044253029	2673239	84 DM	L	4200	G	03-25-94
PAULSTRA CRC (G.R.)	10255	MID006015382	3352308	1 TT	L	750	G	09-26-94
FMC-SHELDON	10225 A	MID044253029	2673249	83 DM	L	4150	G	09-16-94
FMC-SHELDON	9989	MID044253029	2673241	88 DM	L	4400	G	05-09-94
FAYETTE-IPG	9970	MID042158329	3351824	13 DM	L	650	G	04-29-94
DETREX-EUCLID	9865 A	OHD080158702	3088084	24 DM	L	1320	G	03-01-94
FMC-SHELDON	10073	MID044253029	2673244	72 DM	L	3600	G	06-16-94
FAYETTE-IPG	9995	MID042158329	3088249	14 DM	L	770	G	05-11-94
FMC-SHELDON	9813	MID044253029	2673238	84 DM	L	4200	G	02-14-94
KOYO CORPORATION (G.R.)	9883	MID981000607	3352091	27 DM	L	1485	G	03-18-94
FMC-SHELDON	10357	MID 044253029	3571731	90 DM	L	4500	G	10-25-94
CME CORPORATION (G.R.)	9917	MID982627630	3177750	14 DM	L	756	G	04-06-94
DETREX CORP CHICAGO	10412A	ILD 074424938	3595257	30 DM	L	1650	G	12-15-94
CME CORPORATION (G.R.)	9837	MID982627630	3352049	16 DM	L	880	G	02-25-94
FMC-SHELDON	10380	MID044253029	3571733	64 DM	L	3200	G	11-27-94
DETREX-EUCLID	9950 B	OHD080158702	3351020	41 DM	L	2750	G	04-21-94
DETREX-CINNAMINSON	9982	NJD047318043	3050712	20 DM	L	1100	G	05-04-94
DETREX EUCLID	10333B	OHD 080158702	3351113	40 DM	L	2200	G	11-01-94
DETREX-MELROSE	9922A	ILD074424938	3157758	47 DM	L	2585	G	04-07-94
DETREX-MELROSE	10187 A	ILD074424938	3595364	41 DM	L	2255	G	08-24-94
YAMAHA (G.R.)	10413	MID 985569846	3088381	1 TT	L	1600	G	12-14-94
DETREX-MELROSE	9993	ILD074424938	3157959	74 DM	L	4070	G	05-11-94
REX MELROSE PARK	10293	ILD 074424938	3595379	65 DM	L	3575	G	10-11-94
DETREX-MELROSE	10168	ILD074424938	3595356	36 DM	L	1980	G	08-17-94
DETREX- MELROSE	10243A	ILD074424938	3595373	55 DM	L	3025	G	09-22-94
DETREX-MELROSE	9892	ILD074424938	3157755	50 DM	L	2750	G	03-22-94
YAHAMA MUSICAL INST (G.R.)	9844	MID985569946	3351616	1 TT	L	2200	G	02-24-94
DETREX-MELROSE	10107	ILD074424938	3157980	70 DM	L	3850	G	07-13-94
DETREX- MELROSE	9781	ILD074424938	2841497	74 DM	L	4070	G	02-03-94
DETREX-MELROSE	10159	ILD074424938	3157998	68 DM	L	3350	G	08-11-94
DETREX-MELROSE	9879	ILD074424938	3157753	71 DM	L	3905	G	03-17-94
DETREX-MELROSE	9848	ILD074424938	3157751	65 DM	L	3575	G	03-02-94
DETREX-MELROSE	10019	ILD074424938	3157964	74 DM	L	4070	G	05-24-94
DETREX-MELROSE	10085	ILD074424938	3157975	69 DM	L	3795	G	06-22-94
BOKUM TOOL CO	10310	MIG 000099999	3907313	1 DM	L	35	G	10-20-94
JACKSON TUMBLE FINISH	9779	MID005324678	3351542	5 DM	L	275	G	01-31-94
AAR BROOKS (G.R.)	9801	MID006019251	3060864	1 DM	L	220	G	02-09-94
DETREX- INDIANAPOLIS	9815 A	IND085616837	3276832	14 DM	L	770	G	02-16-94
DETREX-CHARLOTTE	9832	NCD049773245	3250652	32 DM	L	1760	G	02-24-94
KOOLANT KOOLERS (G.R.)	9841	MID017168667	3352061	1 DM	L	55	G	02-25-94
DETREX-INDIANPOLIS	9849 A	IND085616837	3276837	7 DM	L	385	G	03-02-94
DETREX-INDIANPOLIS	9849 A	IND085616837	3276837	7 DM	L	385	G	03-02-94
DETREX-INDY	9867A	IND085616837	3276840	60 DM	L	3300	G	03-08-94
FEDERAL MOGUL (G.R.)	9857	MID005358783	3004083	3 DM	L	165	G	03-09-94
IMPERT INDUSTRIES (G.R.)	9958	MID083693374	3352130	1 DM	L	55	G	04-22-94
CONTAINER SPECIALTIES	9962 A	MID005361597	3351778	1 DM	L	55	G	04-26-94
O CORPORATION (G.R.)	10013	MID985569318	1783847	2 DM	L	110	G	05-26-94
KOOLANT KOOLERS (G.R.)	10060	MID017168667	3352173	3 DM	L	165	G	06-10-94
SOUTHGATE TRANSMISSION	10086	MIG000001752	3351271	1 DM	L	50	G	06-23-94
GENERAL FILTER	10108	MID005318696	3088043	1 DM	S	55	G	07-13-94

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ARTA-AE GOETZE (G.R.)	10221	MID047568399	3177511	1 DM	S	55	G	09-09-94
C-SHELDON	10225 B	MID044253029	2673249	1 DM	S	50	G	09-16-94
AFM	10254	MID131420176	3907066	1 DM	S	55	G	09-24-94
YAMAHA MUSICAL INST (G.R.)	10265 B	MID985569946	3352326	2 DM	S	110	G	09-29-94
COMMERCIAL STEEL	10298	MID 005319413	3907388	4 DM	L	220	G	10-13-94
MILLER SMITH (G.R.)	10398A	MID 006025811	3019289	7 DM	L	355	G	12-08-94
YAMAHA MUSICAL INST (G.R.)	10040 C	MID985569946	3352172	3 DM	S	75	G	06-10-94
YAMAHA MUSICAL INST (G.R.)	10040 A	MID985569946	3352172	1 DM	L	55	G	06-10-94
K-BYTE	10436	MID 147753974	3909737	1 DM	L	55	G	12-23-94
IMPERIAL METAL PROD G.R.	10363A	MID 006018279	2194695	7 DM	L	385	G	11-17-94
GOLD STAR COATINGS (G.R.)	9799 B	MID044879088	2117260	7 DM	L	385	G	02-09-94
GELMAN SCIENCES	9932	MID005341813	3351741	2 DM	L	100	G	04-13-94
INTERNATIONAL PAPER	10457	MID 006408439	3352427	1 DM	L	50	G	12-16-94
DETREX CORP ILLINOIS	10382	ILD 074424938	3595251	33 DM	L	1815	G	12-08-94
DETREX CORP CHICAGO	10412C	ILD 074424938	3595257	1 DM	L	55	G	12-15-94
GAST MFG. (BRIDGMAN)	10414	MID 980614762	3727021	11 DM	L	605	G	12-15-94
GAST MFG. (BENTON)	10415A	MID 005109392	3621622	13 DM	L	715	G	12-15-94
GAST MFG (BENTON)	10416	MIG 000003649	3621623	2 DM	L	110	G	12-15-94
GAST MFG. (BENTON)	10415B	MID 005109392	3621622	15 DM	L	825	G	12-15-94
DETROIT EDISON FERMI	10349	MID 087056685	2959383	1 DM	L	55	G	11-03-94

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WAGNER	9732	MID005382577	3350961	3 DM	S	150	G	01-04-94
IZEN SERVICE/DOLLAR	9734	MIG000037729	3350976	12 DM	L	660	G	01-04-94
FMC-SHELDON	9735	MID044253029	2673233	40 DM	L	2000	G	01-05-94
UNIFLEX INC.	9736	MID096968078	3350969	1 DM	L	55	G	01-06-94
KELSEY HAYES COMPANY	9737	MID178080156	3350954	7 DM	L	385	G	01-06-94
FAYETTE-IPG	9740	MID042158329	3350947	12 DM	L	660	G	01-06-94
NORTHERN PRECISION (G.R.)	9746	MID112831375	1530756	12 DM	L	660	G	01-06-94
AAR ADVANCED	9747 A	MID980792212	3060854	11 DM	L	605	G	01-06-94
AAR ADVANCED	9747 B	MID980792212	3060854	1 DM	L	55	G	01-06-94
COMMERCIAL STEEL TREAT	9866	MID005319413	2148725	1 TT	L	1200	G	01-07-94
TAYLOR MACHINE	9739	MID043771385	3350814	1 DM	L	55	G	01-08-94
MACOMB DAILY	9741	MID980996813	3350502	22 DM	L	1100	G	01-10-94
HEADER HEAT TREAT	9742	MID990859175	3350981	2 DM	L	110	G	01-11-94
PRESTOLITE ELECTRIC	9743	MID016801961	2554472	1 DM	L	55	G	01-11-94
AAR ADVANCED		MID980792212	3350935	1 TT	L	1850	G	01-11-94
MOTOR PRODUCTS	9752	MID061868048	3088103	4 DM	L	220	G	01-12-94
FEDERAL MOGUL (G.R.)	9744	MID005358783	3004069	4 DM	L	220	G	01-13-94
KOYO CORPORATION (G.R.)	9745	MID985569318	1783844	4 DM	L	220	G	01-13-94
ELASTIMOLD (G.R.)	9748	MID080356876	1724518	2 DM	L	110	G	01-13-94
AMERIKAM (G.R.)	9749	MID006011464	1543283	3 DM	L	150	G	01-13-94
PORT CITY (GR)	9750	MID982066813	3156861	1 DM	L	55	G	01-13-94
RENEW VALVE	9753	MIG000025326	2320306	2 DM	L	110	G	01-13-94
DETREX-INDIANAPOLIS	9751 A	IND085616837	3276814	9 DM	L	495	G	01-13-94
DETREX-INDIANAPOLIS	9751 B	IND085616837	3276814	2 DM	L	110	G	01-13-94
REX-INDIANAPOLIS	9751 C	IND085616837	3276814	2 DM	L	110	G	01-13-94
WOOLF AIRCRAFT PRODUCT	9765	MID121525299	3114631	4 DM	L	138	G	01-18-94
VERSATILE MFG.	9754	MID982628323	2554116	2 DM	L	110	G	01-19-94
GELMAN SCIENCES-DINO	9755 A	MID985609148	2560267	1 DM	L	55	G	01-21-94
GELMAN SCIENCES-DINO	9755 C	MID985609148	2560267	1 DM	L	55	G	01-21-94
GELMAN SCIENCES-DINO	9755 D	MID985609148	2560267	1 DM	L	55	G	01-21-94
GELMAN SCIENCES	9756 A	MID985609148	3177239	4 DM	L	220	G	01-21-94
GELMAN SCIENCES	9756 A	MID985609148	3177239	1 DM	L	55	G	01-21-94
GRINNELL SCREW	9757	MID005863411	3351524	4 DM	L	220	G	01-22-94
AFM	9758	MID131420176	3351529	8 DM	L	440	G	01-22-94
KERR MANUFACTURING	9764	MID061872917	2141312	2 DM	L	55	G	01-24-94
DNR INC.	9766	MID982421166	3177311	1 DM	L	55	G	01-24-94
THOMPSON-MCCULLY	9767		3351527	2 DM	L	100	G	01-24-94
CHRYLSEER PENT-YPSILANTI	9768	MID981527427	765815	1 DM	L	55	G	01-25-94
KOPACZ	9769	MID061880803	3177083	2 DM	L	110	G	01-25-94
MICHIGAN METAL COATINGS	9770	MID985642594	2736025	7 DM	L	350	G	01-25-94
PALCO INC.	9771	MID096963798	2736024	6 DM	L	300	G	01-25-94
MQS INSPECTION	9772 A	MID982204703	3177338	4 DM	L	220	G	01-25-94
MQS INSPECTION	9772 B	MID982204703	3177338	1 DM	L	55	G	01-25-94
SPEAKER HINES & THOMAS	9773 A	MIG000015068	3350893	2 DM	L	100	G	01-25-94
KELSEY HAYES-BRIGHTON	9959	MID053334439	3634851	1 TT	L	900	G	04-22-94
WOOLF AIRCRAFT	10245	MID121525299	3351872	2 DM	L	110	G	09-21-94
DETROIT EDISON BELLE	10430	MID 000718841	2821823	1 DM	L	55	G	12-20-94
TAYLOR MACHINE PROD	10433	MID 043771385	3909717	3 DM	L	150	G	12-21-94
R INCORPORATED	10424	MID 982421166	3909697	1 DM	L	55	G	12-19-94
N R INCORPORATED	10354	MID 982421166	3907223	1 DM	L	55	G	11-11-94
SATURN ELECTRONICS	10449	MID 000359406	3909760	5 DM	L	25	G	12-29-94
DETROIT EDISON WSC	10322	MID 000722157	3616621	5 DM	L	25	G	10-28-94

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DETREX CORP CHICAGO	10412B	ILD 074424938	3595257	1 DM	L	55	G	12-15-94
TURN ELECTRONICS	10315	MID000359406	3907288	7 DM	L	35	G	10-27-94
CAYMAN CHEMICAL	10444A	MID 985664853	3909729	1 DM	L	50	G	12-28-94
DETROIT EDISON H.B.	10326	MID 000718445	2350439	1 DM	L	55	G	10-31-94
CADILLAC ASPHALT	10325	MID 005321443	3907349	1 DM	L	55	G	10-31-94
LAMINA INC. (G.R.)	10277	MID 006017966	2712075	2 DM	L	110	G	10-19-94
ALMA PRODUCTS G.R.	10275	MID005378146	3016152	1 DM	L	55	G	10-07-94
MIDWEST BRAKE BOND	10405A	MID 169740354	3909621	2 DM	L	110	G	12-12-94
GRACE & WILD STUDIOS	10347A	MID 121631089	3907226	2 DM	L	100	G	11-09-94
D N R INCORPORATED	10296	MID 982421166	3907480	4 DM	L	2290	G	10-12-94
PILOT INDUSTRIES	10344	MID 005358262	3907221	5 DM	L	275	G	11-10-94
DETREX EUCLID	10333A	OHD 080158702	3351113	9 DM	L	495	G	11-01-94
PILOT INDUSTRIES	10299	MID 005358262	3907333	8 DM	L	400	G	10-14-94
PILOT IND.	10421	MID 005358262	3909618	12 DMS	L	660	G	12-16-94
AUTO ALLIANCE	10385	MID 981953912	3909531	9 DM	L	495	G	12-01-94
DETROIT EDISON TROMBLY	10391	MID 000721589	3616883	2 DM	L	110	G	12-06-94
DETROIT EDISON ST. CLAIR	10431	MID 000721548	2821824	1 DM	L	55	G	12-20-94
TAYLOR MACHINE	9807	MID048771385	3350815	1 DM	L	55	G	02-10-94
TAYLOR MACHINE	9895	MID043771985	3350816	3 DM	L	165	G	03-24-94
TREND PRODUCTS	9943	MID382733951	3351774	7 DM	L	35	G	04-13-94
TAYLOR MACHINE	10004	MID043771385	3350817	2 DM	L	110	G	05-13-94
TAYLOR MACHINE PRODUCT	10286	MID 043771385	3907439	1 DM	L	55	G	10-06-94
DETROIT EDISON WSC	10376A	MID 000722157	3616638	1 DM	L	5	G	11-17-94
DETROIT EDISON-LIVERNOIS	9882A	MID000722157	3043652	1 DM	L	5	G	03-17-94
DETROIT EDISON-LIVERNOIS	9911	MID000722157	3043685	2 DM	L	10	G	04-04-94
DETROIT EDISON-WSC	9819	MID000722157	3043642	4 DM	L	20	G	02-10-94
DNR INC.	9785	MID982421166	3177312	1 DM	L	55	G	02-03-94
DNR INC.	9987	MID982421166	3177314	1 DM	L	55	G	05-06-94
SATURN ELECTRONICS	9888	MID985608686	3351676	7 DM	L	35	G	03-18-94
DNR INC.	9877	MID982421166	3177313	1 DM	L	55	G	03-15-94
SATURN ELECTRONICS	9968	MID985608686	3351819	7 DM	L	35	G	04-28-94
DNR INC.	9991	MID982421166	3177433	1 DM	L	55	G	05-10-94
NSK TECHNICAL CENTER	9969	MID985641620	2792051	1 DM	L	5	G	04-28-94
WOOLF AIRCRAFT PRODUCT	9910	MID121525299	3088149	2 DM	L	110	G	04-04-94
WOOLF AIRCRAFT	9981	MID121525299	3088133	2 DM	L	110	G	05-04-94
HURON-LEXINGTON	9833	MID005499470	3350715	1 DM	L	50	G	02-24-94
LAMINA INC (G.R.)	9906	MID006017966	2712058	2 DM	L	110	G	03-25-94
RENEW VALVE	9952	MIG000025326	2320317	1 DM	L	55	G	04-21-94
PILOT INDUSTRIES	9899 A	MID005358262	3351725	5 DM	L	275	G	03-30-94
NORBERT INDUSTRIES	9893	MID059909523	2554372	2 DM	L	100	G	03-23-94
UNIVERSAL SUPERABRASIVE	9953	MID004912150	3351803	2 DM	L	100	G	04-21-94
LAMINA (G.R.)	9973	MID006017966	2712051	2 DM	L	110	G	04-29-94
WOOLF AIRCRAFT PRODUCT	9847	MID121525299	3351528	3 DM	L	150	G	03-02-94
DETROIT EDISON - WSC	9946 A	MID000722157	3043695	3 DM	L	115	G	04-20-94
PILOT INDUSTRIES	9854	MID005358262	3351622	3 DM	L	165	G	03-07-94
MASCOTECH (G.R.)	9935	MID005214911	3582125	2 DM	L	110	G	04-13-94
LEGENDS MFG, INC	9927	MID005377056	1151240	8 DM	L	400	G	04-11-94
DETROIT DIESEL CORP	9809	MID005356803	3361324	7 DM	L	370	G	02-11-94
DETROIT INDUSTRIES	9788	MID005856262	3351553	3 DM	L	165	G	02-04-94
DETROIT PA /STRAND IND.	9818	MID005850442	3351572	3 DM	L	150	G	02-16-94
ACR INDUSTRIES	9856	MID982605602	1414213	4 DM	L	220	G	03-08-94
FAYETTE-IPG	9881	MID091605972	3088112	7 DM	L	385	G	03-17-94

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TREX-EUCLID	9865 B	OHD080158702	3088084	10 DM	L	550	G	03-01-94
TREX-EUCLID	9876	OHD080158702	3177414	15 DM	L	825	G	03-14-94
HURON MFG-PORT HURON	9912	MID985567171	3351711	5 DM	L	250	G	04-05-94
ACR INDUSTRIES	10389	MID 882605602	3909595	4 DM	L	220	G	12-06-94
DETREX-EUCLID	9950 A	OHD080158702	3351020	4 DM	L	220	G	04-21-94
HURON-PORT HURON	9834	MID985567171	3351595	6 DM	L	300	G	02-24-94
DETREX-MELROSE	9922B	ILD074424938	3157758	13 DM	L	715	G	04-07-94
FAYETTE-IPG	9827	MID091605972	3088109	7 DM	L	385	G	02-18-94
BRAZEWAY INC .	9812 A	MID005035910	3351557	8 DM	L	400	G	02-11-94
FAYETTE-IPG	9790	MID042159829	3088110	19 DM	L	1045	G	02-05-94
FAYETTE-IPG	9850	MID042158329	3088111	11 DM	L	605	G	03-01-94
FAYETTE-IPG	9900	MID042158329	3088113	15 DM	L	825	G	03-30-94
PRESTOLITE ELECTRIC	9786	MID016801961	3351566	1 DM	S	50	G	02-03-94
GOLD STAR COATINGS (G.R.)	9799 A	MID044879088	2117260	7 DM	L	385	G	02-09-94
DETROIT EDISON-SCPP	9872	MID000721548	3049081	1 DM	L	30	G	03-09-94
DETROIT EDISON-CONNORS	9890	MID000809608	2593917	1 TT	L	975	G	03-18-94
PILOT INDUSTRIES	9899 B	MID005358262	3351725	3 DM	L	165	G	03-30-94
DETROIT EDISON-BRPP	9914A	MID000718841	3049099	1 DM	L	55	G	04-05-94
DETREX-MELROSE	9922C	ILD074424938	3157758	2 DM	L	110	G	04-07-94
AUTOALLIANCE	10003	MID981953912	3351856	5 DM	L	275	G	05-13-94
TAYLOR MACHINE	10100	MID043771395	3350818	2 DM	L	110	G	06-30-94
TAYLOR MACHINE	10131	MID043771385	3350819	1 DM	L	55	G	07-28-94
TAYLOR MACHINE	10213	MID043771385	3350820	2 DM	L	110	G	09-06-94
DETROIT EDISON-WSC	10179 B	MID000722157	3616770	3 DM	L	15	G	08-19-94
DIE / BARNES (G.R.)	10038	MID005343801	3277449	1 DM	L	30	G	06-10-94
WOOLF AIRCRAFT	10371	MID 121525299	3351873	2 DM	L	110	G	11-17-94
FORT AUTO ELECTRIC	10074	MIG000003318	3351247	2 DM	L	110	G	06-16-94
DNR INC.	10084	MID982421166	3177434	1 DM	L	55	G	06-22-94
WILLIAMS INTERNATIONAL	10032	MID006401970	3224313	2 DM	L	110	G	06-02-94
SATURN ELECTRONICS	10216	MID000359406	3907034	7 DM	L	35	G	09-06-94
SATURN ELECTRONICS	10083	MID000359406	3351236	8 DM	L	40	G	06-21-94
MIDWEST BRAKE	10230 A	MID169740354	3907129	1 DM	L	50	G	09-19-94
GOLD STAR COATINGS (G.R.)	10157 B	MID044879088	3177509	1 DM	L	55	G	08-11-94
WILLIAMS INTERNATIONAL	10235	MID006401970	3224317	2 DM	L	110	G	09-20-94
DNR INC.	10246	MID982421166	3907116	1 DM	L	55	G	09-22-94
DNR INC.	10132	MID982421166	3177435	1 DM	L	55	G	07-29-94
WOOLF AIRCRAFT	10181	MID121525299	3351871	2 DM	L	110	G	08-22-94
MIDWEST BRAKE	10012 A	MID169740354	3351832	1 DM	L	50	G	05-19-94
PACKAGING CORP (G.R.)	10263	MID006023691	3352323	1 DM	L	55	G	09-29-94
PILOT INDUSTRIES-DUNCAN	10203 A	MID005358262	3351479	1 DM	L	50	G	08-29-94
PILOT INDUSTRIES	10025	MID005358262	3088278	2 DM	L	110	G	05-20-94
WOOLF AIRCRAFT	10106	MID121525299	3351870	2 DM	L	110	G	07-12-94
HATCH STAMPING	10156 B	MID005338603	3351286	1 DM	L	55	G	08-10-94
EPPA/STAND IND.	10063	MID005350442	3351934	1 DM	L	50	G	06-10-94
LAMINA INC. (G.R.)	10044	MID006017966	2712063	2 DM	L	110	G	06-10-94
DETREX- MELROSE	10243B	ILD074424938	3595373	2 DM	L	110	G	09-22-94
DETREX-EUCLID	10020 C	OHD080158702	3088095	5 DM	L	275	G	05-20-94
PILOT INDUSTRIES	10049 A	MID005358262	3351920	2 DM	L	110	G	06-07-94
RON MFG-PORT HURON	10253	MID985567171	3907121	5 DM	L	250	G	09-23-94
GOETZE CORP (G.R.)	10248	MID088862933	3352304	4 DM	L	220	G	09-20-94
HURON MFG-LEXINGTON	10252	MID005499470	3907083	5 DM	L	250	G	09-23-94
PILOT INDUSTRIES-DUNCAN	10154	MID005358262	3351432	7 DM	L	385	G	08-10-94

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RON MFG-PORT HURON	10101	MID985567171	3351278	8 DM	L	480	G	07-05-94
TREX-MELROSE	10187 B	ILD074424938	3595364	17 DM	L	935	G	08-24-94
FAYETTE-IPG	10027	MID042158329	3088235	12 DM	L	660	G	05-25-94
AUTOALLIANCE	9777	MID981953912	3351536	8 DM	L	440	G	01-28-94
PILOT INDUSTRIES	10049 B	MID005358262	3351920	2 DM	L	110	G	06-07-94
AUTOALLIANCE	10075	MID981953912	3351537	9 DM	L	495	G	06-16-94
PILOT INDUSTRIES-DUNCAN	10203 B	MID005358262	3351479	1 DM	S	50	G	08-29-94
PILOT INDUSTRIES-DUNCAN	10224	MID005358262	3907106	2 DM	L	100	G	09-16-94
AUTOALLIANCE	10247	MID981953912	3907132	1 DM	L	55	G	09-22-94
DETROIT EDISON-BRPP	10270	MID000718841	1861078	1 DM	L	55	G	09-30-94
DETREX EUCLID	10333C	OHD 080158702	3351113	1 DM	L	55	G	11-01-94
WOLVERINE WORLD. (GR)	10024 A	MID980825988	3352168	1 DM	L	55	G	05-20-94
DETREX-MELROSE	10187 C	ILD074424938	3595364	17 DM	L	935	G	08-24-94
KELLY/VERBRUGGE (G.R.)	9762	MID006410377	3352036	2 DM	L	110	G	02-01-94
KELLY DISTRIBUTING (G.R.)	9824	MID006410377	2910469	2 DM	L	110	G	02-18-94
KELLY/VERBRUGGE (G.R.)	9864	MID006410377	3352075	1 DM	L	55	G	03-09-94
PROGRESSIVE DYN. (G.R.)		MID006522583	3352104	1 DM	L	55	G	03-29-94
WOLVERINE WORLD. (G.R.)	10206 A	MID980825988	3177692	1 DM	L	55	G	08-30-94
RENOSOL (INTERSTATE)	10242	MID 043768555	3184697	4 DM	L	220	G	09-23-94
KELSEY HAYES(FENTON)	10402	MID 178080156	3909542	2 DM	L	100	G	12-09-94
DETROIT EDISON-WSC	10036	MID000722157	3043737	1 DM	L	55	G	06-06-94
ENVIRONMENTAL WASTE	10294B	MID 057002602	3485904	1 DM	L	55	G	10-12-94
ENVIRONMENTAL WASTE	9942 B	MID057002602	3486047	8 DM	L	440	G	04-14-94
DETROIT EDISON - WSC	9946 B	MID000722157	3043695	1 DM	L	55	G	04-20-94
DETROIT EDISON-WSC	10000	MID000722157	3043715	1 DM	L	55	G	05-11-94
REILLY PLATING	10035	MID047179347	3351946	1 TT	L	800	G	06-04-94
DETROIT EDISON-BRPP	10053	MID000718841	3088295	1 DM	L	50	G	06-07-94
DETROIT EDISON-WSC	10059 A	MID000722157	3043736	2 DM	L	10	G	06-09-94
DETROIT EDISON-WSC	10059 B	MID000722157	3043736	2 DM	L	110	G	06-09-94
DETROIT EDISON-MPP	10092 A	MID092175074	3049045	1 DM	L	50	G	06-29-94
DETROIT EDISON-MPP	10092 B	MID092175074	3049045	1 DM	L	50	G	06-29-94
DETROIT EDISON-WSC	10142	MID000722157	3616752	1 DM	L	55	G	07-14-94
DETROIT EDISON-WSC	10179 A	MID000722157	3616770	2 DM	L	110	G	08-19-94
DETROIT EDISON-WSC	10179 C	MID000722157	3616770	1 DM	L	55	G	08-19-94
DETROIT EDISON-TCPP	10188	MID000721571	3351197	1 DM	L	50	G	08-25-94
DETROIT EDISON-NEWPORT	10072	MID000724666	3616859	2 DM	L	100	G	06-16-94
DETROIT EDISON-LIVERNOS	9882B	MID000722157	3043652	2 DM	L	110	G	03-17-94
KELSEY HAYES-FENTON	10163	MID178080156	3351442	1 DM	L	55	G	08-12-94
KELSEY HAYES-FENTON	10163	MID178080156	3351442	7 DM	L	385	G	08-12-94
GELMAN SCIENCES	9814 A	MID985609148	3177240	11 DM	L	605	G	02-15-94
DETREX-INDY	9934	IND085616837	3276845	13 DM	L	715	G	04-13-94
DETREX-INDY	10013	IND085616837	3072711	13 DM	L	715	G	05-05-94
DETREX-INDY	10169	IND085616837	3072913	12 DM	L	660	G	08-17-94
KELSEY HAYES-BRIGHTON	10080	MID053334439	3350515	5 DM	L	250	G	06-22-94
KELSEY HAYES-BRIGHTON	10314B	MID 053334439	3907329	5 DM	L	275	G	10-27-94
DETREX-INDY	10102	IND085616837	3072738	10 DM	L	550	G	07-07-94
DETROIT EDISON-FERMI	10001 A	MID087056685	2959359	5 DM	L	550	G	05-12-94
DETROIT EDISON-FERMI	10268 A	MID087056685	2959399	1 DM	L	55	G	09-29-94
USER OPTICAL	10334	MID 037744919	3907263	1 DM	L	50	G	11-02-94
DLP (G.R.)	10251B	MID 985629682	3908011	1 DM	L	55	G	09-23-94
SEALED POWER-ZEEL (G.R.)	10261	MID079290227	2399638	2 DM	L	55	G	09-29-94
BAXTER - BURDICK (G.R.)	9977	MID072575731	3502312	16 DM	L	864	G	04-29-94

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ISORS, INC.	9894	MID049857421	3351674	2 DM	L	10	G	03-23-94
LEX-MELROSE	9922D	ILD074424938	3157758	17 DM	L	935	G	04-07-94
DETREX-EUCLID	9950 D	OHD080158702	3351020	8 DM	L	440	G	04-21-94
KAISER OPTICAL	9961	MID037744919	1324157	1 DM	L	55	G	04-25-94
WOLVERINE WORLD. (GR)	10024 B	MID980825988	3352168	1 DM	L	55	G	05-20-94
TARNOW ELECTRIC	10030	MIG000038990	3351914	1 DM	L	30	G	05-27-94
GOLD STAR COATINGS (G.R.)	10157 A	MID044879088	3177509	1 DM	L	55	G	08-11-94
APT	10034	MID052025566	3351943	8 DM	L	440	G	06-03-94
ABB KENT (ESG)	10103	NYD986999449	3622164	2 DM	L	110	G	07-08-94
DLP (G.R.)	10251A	MID 985629682	3908011	4 DM	L	220	G	09-23-94
TREMCO AUTO BODY	10305	MIT 270011273	3088013	1 DM	L	55	G	10-18-94
ENVIRONMENTAL WASTE	10294C	MID 057002602	3485904	2 DM	L	110	G	10-12-94
MCGEAN-ROHCO	10066 B	MID069820181	2594320	6 DM	L	330	G	06-14-94
MIDWEST BRAKE	10012 C	MID169740354	3351832	6 DM	L	300	G	05-19-94
ZANTOP AIRLINES	10065	MID981194400	3351939	1 TT	L	2325	G	06-13-94
DETROIT EDISON-MPP	10064	MID092175074	3049044	1 TT	L	2095	G	06-10-94
DETROIT EDISON - SECOND	9984	MID000809897	3043630	3 DM	L	165	G	05-05-94
DETROIT EDISON - MAPLE	10303	MID 000724708	3616881	1 DM	L	55	G	10-18-94
DETROIT EDISON - TROMB	10304	MID 000721589	3616878	1 DM	L	55	G	10-18-94
ENVIRONMENTAL WASTE	10294A	MID 057002602	3485904	3 DM	L	165	G	10-12-94
ENVIRONMENTAL WASTE	9942 A	MID057002602	3486047	6 DM	L	330	G	04-14-94
FEDERAL MOGUL (G.R.)	9940B	MID005358783	3004094	2 DM	L	400	G	04-13-94
ENVIRONMENTAL WASTE	9942 C	MID057002602	3486047	4 DM	L	220	G	04-14-94
DETREX-CHARLOTTE	10135	NCD049773245	3607916	4 DM	L	220	G	08-02-94
REX-CHARLOTTE	10205	NCD049773245	3607763	14 DM	L	700	G	08-30-94
DETREX-CHARLOTTE	10054	NCD049773245	3250780	23 DM	L	1150	G	06-06-94
DETREX-CHARLOTTE	10054	NCD049773245	3250780	3 DM	L	150	G	06-06-94
CHEM CENTRAL (G.R.)	10172	MID017106193	3352260	5 DM	L	275	G	08-18-94
FMC-SHELDON	9897 B	MID044253029	2673239	3 DM	L	150	G	03-25-94
FEDERAL-MOGUL (G.R.)	9908 B	MID005358783	3004085	6 DM	L	324	G	03-25-94
DETREX-CHARLOTTE	9909	NCD049773245	3250861	10 DM	L	550	G	03-30-94
YAMAHA MUSICAL INST (G.R.)	10140	MID985569946	3352254	12 DM	L	660	G	08-05-94
YAMAHA MUSICAL INST (G.R.)	10128	MID985569946	3352240	3 DM	L	165	G	07-28-94
YAMAHA MUSICAL INST (G.R.)	10127	MID985569946	3352241	16 DM	L	880	G	07-28-94
YAMAHA MUSICAL INST (G.R.)	10265 A	MID985569946	3352326	2 DM	L	110	G	09-29-94
FEDERAL MOGUL (G.R.)	9940A	MID005358783	3004094	3 DM	L	150	G	04-13-94
FEDERAL MOGUL (G.R.)	9940C	MID005358783	3004094	5 DM	L	250	G	04-13-94
DETREX- INDIANAPOLIS	9774	IND085616837	3276826	13 DM	L	715	G	01-26-94
AAR ADVANCED	9776	MID980792212	2937071	11 DM	L	555	G	01-26-94
BRAZEWAY INC .	9812 B	MID005035910	3351557	11 DM	L	550	G	02-11-94
DETREX- INDIANAPOLIS	9815 B	IND085616837	3276832	22 DM	L	1210	G	02-16-94
JONES & HENRY LAB	9845	OHD987011088	3350894	16 DM	L	80	G	03-03-94
DETREX-INDY	9867B	IND085616837	3276840	14 DM	L	350	G	03-08-94
KAYDON CORPORATION (G.R.)	9863	MID006016073	3352066	2 DM	L	110	G	03-09-94
STANDARD DIE	9816 B	MID985634203	3351583	4 DM	L	220	G	02-17-94
CARBOLOY INCORPORATED	9806 B	MID044264428	3351567	4 DM	L	40	G	02-04-94
GELMAN SCIENCES	9814 B	MID985609148	3177240	1 DM	S	55	G	02-15-94
HILLSDALE TOOL	10069	MID000809798	3088280	4 DM	L	220	G	06-14-94
STANDARD DIE	9816 C	MID985634203	3351583	1 DM	S	55	G	02-17-94
FEDERAL MOGUL (G.R.)	9778	MID005358783	3004076	1 TT	L	725	G	01-31-94
MIDWEST BRAKE BOND CO	10448	MID 169740354	3909750	9 DM	L	450	G	12-29-94
DETROIT EDISON-SCPP		MID000721548	2821756	1 DM	L	55	G	09-08-94

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DETROIT EDISON CASS CITY	10384	MID 985659614	3038244	1 DM	L	55	G	11-23-94
DETROIT EDISON WSC	10376B	MID 000722157	3616638	3 DM	L	150	G	11-17-94
AWTEC	10423	MIG 985566784	3471049	1 DM	L	55	G	12-19-94
DETROIT EDISON WSC	10376C	MID 000722157	3616638	2 DM	L	75	G	11-17-94
HILLSDALE TOOL	10411	MID 000809798	3909638	4 DM	S	220	G	12-13-94
MC GEAN-ROHCO INC.	10390	MID 069820181	2594325	1 DM	L	55	G	12-07-94
MQS INSPECTION	10393A	MIO000381079	3088353	1 DM	L	55	G	12-07-94
MQS INSPECTION	10393B	MIO000381079	3088353	1 DM	L	55	G	12-07-94
GELMAN SCIENCES	10306A	MID 005341813	3907322	4 DM	L	200	G	10-19-94
GELMAN SCIENCES	10306C	MID 005341813	3907322	1 DM	L	50	G	10-19-94
KOPACZ INDUSTRIAL	10327	MID 178080156	3907361	2 DM	L	10	G	10-31-94
GELMAN SCIENCES	10306B	MID 005341813	3907322	1 DM	L	50	G	10-19-94
DEDOES INDUSTRIES	10288	MID006006589	3907177	4 DM	L	220	G	10-07-94
THE MACOMB DAILY	10292	MID 980996813	3907463	24 DM	L	1200	G	10-11-94
U.S.INDUSTRIAL TOOL	10297	MID 005365812	3907440	2 DM	L	110	G	10-12-94
MURRAY AVIATION	10328	MIG 000038086	3907359	1 DM	L	55	G	10-31-94
NATIONAL ENVELOPE	10372	MIG 000037457	3907219	4 DM	L	200	G	11-17-94
FLINT INK G.R.	10318	MID 005360235	3352364	3 DM	L	165	G	10-28-94
TREMCO AUTOBODY	10378	MIT 270011273	3088026	2 DM	L	110	G	11-18-94
SHERWIN WILLIAMS	10403	MID060978038	3909622	1 DM	L	50	G	12-12-94
MEXICAN INDUSTRIES	10404	MIG 000026652	3907203	2 DM	L	110	G	12-12-94
GAST MFG. (BENTON HAR)	10407	MID 005109392	3621621	1 TT	L	2200	G	12-12-94
GAST MFG (BENTONHAR)	10408	MIG 000003649	3621624	1 TT	L	250	G	12-12-94
GAST MFG(BRIDGMAN)	10409	MID 980614762	3727022	1 TT	L	875	G	12-12-94
ST MFG. CORP	10439	MID 005109392	3621619	1 TT	L	1200	G	11-21-94
ST MFG. CORP	10440	MIG 000003649	3621620	1 TT	L	700	G	11-21-94
GAST MFG. CORP	10441	MID 980614762	3727020	1 TT	L	1300	G	11-21-94
GELMAN SCIENCES	10095	MID005341813	3351987	1 DM	L	50	G	06-29-94
GRACO, INC.	10147 B	MID985636620	3351378	1 DM	L	55	G	08-04-94
OBSERVER & ECCENTRIC	10348	MID 050613025	3907230	1 DM	L	10	G	11-09-94
ADVISORY SOURCE	10180	MID985619311	3351458	2 DM	L	100	G	08-22-94
BRAUN BRUMFIELD	10182	MID005344791	3351474	2 DM	L	100	G	08-23-94
DETROIT EDISON-FERMI	10268 D	MID087056685	2959399	1 DM	L	50	G	09-29-94
KELSEY HAYES-BRIGHTON	10099	MID053334439	3351222	3 DM	L	165	G	06-30-94
KELSEY HAYES-BRIGHTON	10314A	MID 053334439	3907329	1 DM	L	55	G	10-27-94
R & B MACHINE	10260	MIG000001623	3630776	2 DM	L	10	G	09-29-94
YPSILANTI PRESS	10150	MIG000039480	3351383	1 TT	L	1150	G	08-09-94
GRACO, INC.	10147 A	MID985636620	3351378	1 DM	L	55	G	08-04-94
CLEVELAND TRAMRAIL	10137	MIG000039416	3351368	1 DM	L	50	G	08-02-94
MCGEAN-ROHCO	10066 A	MID069820181	2594320	17 DM	L	935	G	06-14-94
MCGEAN-ROHCO	10066 C	MID069820181	2594320	1 DM	S	55	G	06-14-94
PRIMORE-SEDCO	10067 A	MID005050794	3351955	4 DM	L	220	G	06-14-94
WOLVERINE COIL	10081	MID005356969	3351905	5 DM	L	250	G	06-17-94
MURRAY AVIATION	10096	MID000038095	3351195	1 DM	L	50	G	06-29-94
DEDOES INDUSTRIES	10124	MID006006589	3351332	2 DM	L	100	G	07-22-94
HARVARD INDUSTRIES	10126	MID083940403	3351950	1 TT	L	3450	G	07-25-94
PILOT INDUSTRIES-BISHOP	10153	MIG000038304	3351373	2 DM	L	110	G	08-10-94
JACKSON TUMBLE	10155	MID005324678	3351366	18 DM	L	990	G	08-10-94
HIGAN METAL COATINGS	10173	MID985642594	3351439	3 DM	L	165	G	08-18-94
RWIN WILLIAMS	10174	MID060978038	3351452	1 DM	L	55	G	08-18-94
MULTI-ARC	10240	MID981795644	3907172	5 DM	L	250	G	09-21-94
KELSEY HAYES-BRIGHTON	10314C	MID 053334439	3907329	3 DM	L	165	G	10-27-94

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ONS TOOL	10208	MIG000022892	3907016	4 DM	L	220	G	08-31-94
TROIT EDISON-FERMI	10268 C	MID087056685	2959399	17 DM	L	884	G	09-29-94
WOLVERINE WORLD. (G.R.)	10206 B	MID980825988	3177692	3 DM	L	165	G	08-30-94
WISNE AUTOMATION-NOVI	10212	MID037738408	3351374	2 DM	L	110	G	09-02-94
WOLVERINE WORLD. (G.R.)		MID980825988	3352210	1 DM	S	55	G	07-21-94
WOLVERINE WORLD. (G.R.)		MID980825988	3352210	1 DM	S	55	G	07-21-94
WOLVERINE WORLD. (G.R.)		MID980825988	3352210	2 DM	S	110	G	07-21-94
DETROIT EDISON-TCPP	10189	MID000721571	3351455	1 DM	S	50	G	08-25-94
MICHIGAN METAL COATING	10369	MID 985642581	3907236	5 DM	L	275	G	11-17-94
CARGOTAINERS PRODUCTS	10377	MID 004350914	3907195	5 DM	L	250	G	11-18-94
GREY HUB	10387	MIG 000040732	3909599	2 DM	L	110	G	12-05-94
PILOT INDUSTRIES	10388	MIG 000038301	3909566	8 DM	L	400	G	12-05-94
STANDARD MACHINE	10427	MID 985603950	3909724	1 TT	L	800	G	12-20-94
COUNTY OF WAYNE	10309	MIO 888544700	3907350	1 TT	L	2325	G	10-20-94
ANDERSON BUICK	10355	MID 044589559	3907189	3 DM	L	150	G	11-11-94
MICHIGAN METAL COATING	10368	MID 985642594	3907217	1 TT	L	1075	G	11-15-94
SATURN IND. PAINTING	10143	MIG000031658	3351307	3 DM	L	150	G	07-14-94
QUALITY FIRST COATINGS	10123	MIG000039427	3351340	1 TT	L	1000	G	07-15-94
MQS INSPECTION	10122 A	MIO000381079	3177342	1 DM	L	55	G	07-18-94
MQS INSPECTION	10122 B	MIO000381079	3177342	2 DM	L	110	G	07-18-94
MACOMB DAILY		MID980996813	3351336	24 DM	L	1200	G	07-18-94
YAMAHA MUSICAL INST (G.R.)	10129	MID985569946	3352239	35 DM	L	1925	G	07-27-94
MERCURY PAINT	10160	MID005317896	3351289	2 DM	L	110	G	08-11-94
MICHIGAN METAL COATINGS	10165	MID985642594	1167124	1 TT	L	1170	G	08-15-94
HIGAN SHIPPERS (G.R.)	10197	MID017093675	3177691	4 DM	L	220	G	08-26-94
HERWIN WILLIAMS	10223	MID060978038	3907102	1 DM	L	50	G	09-14-94
FLINT INK (G.R.)	10271	MID005360235	3352298	8 DM	L	440	G	09-16-94
AFC ROOFING	10244	MID982073718	3907067	8 DM	L	400	G	09-22-94
MQS INSPECTION	10258 A	MIO000381079	3088173	2 DM	L	110	G	09-27-94
MQS INSPECTION	10258 B	MIO000381079	3088173	1 DM	L	55	G	09-27-94
OBSERVER & ECCENTRIC	10337	MID 050613025	3907358	1 DM	L	55	G	11-08-94
GELMAN SCIENCES	10306D	MID 005341813	3907322	1 DM	L	50	G	10-19-94
U.S.INDUSTRIAL TOOL	10283	MID 005365812	3907409	3 DM	L	165	G	10-03-94
STANDARD MACHINE	10428	MID 985603950	3909721	20 DMS	L	1100	G	12-20-94
DEDOES INDUSRTIES	10345	MID 006006589	3907211	5 DM	L	250	G	11-10-94
PRIMORE INC., SEDCO DIV.	10375	MID 005050794	3907251	4 DM	L	200	G	11-18-94
MIDWEST BRAKE	10230 B	MID169740354	3907129	2 DM	L	100	G	09-19-94
MACOMB DAILY	10425	MID 980996813	3909619	22 DMS	L	1100	G	12-19-94
MIDWEST BRAKE BOND	10405B	MID 169740354	3909621	5 DM	L	295	G	12-12-94
DETROIT EDISON-BRPP	9914B	MID000718841	3049099	9 DM	L	495	G	04-05-94
MICHIGAN METAL COATINGS	9929	MID985642594	3351744	1 TT	L	1145	G	04-12-94
FLINT INK	9921D	MID982064859	3351740	9 DM	L	495	G	04-06-94
MURRAY AVIATION INC.	9825	MID000038086	3351603	1 DM	L	55	G	02-18-94
U.S. INDUSTRIAL TOOL	9830	MID005365812	3351604	4 DM	L	220	G	02-22-94
MICHIGAN METAL COATINGS	9913	MID985642534	3351743	6 DM	L	330	G	04-05-94
ALBAR INDUSTRIES	9915B	MID981189020	3351727	2 DM	L	97	G	04-06-94
FLINT INK	9921C	MID982064859	3351740	2 DM	L	110	G	04-06-94
MACOMB DAILY	9842	MID980996813	3351620	19 DM	L	950	G	03-03-94
IT INK (G.R.)	9887	MID005360235	3352093	6 DM	L	330	G	03-18-94
LI PRINTERS (G.R.)	9965	MID005373527	3352116	1 DM	L	55	G	03-24-94
ALBAR INDUSTRIES	9915A	MID981189020	3351727	3 DM	L	147	G	04-06-94
FLINT INK	9921A	MID982064859	3351740	2 DM	L	110	G	04-06-94

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HARVARD INDUSTRIES	9923	MID083940403	3351742	1 TT	L	2700	G	04-08-94
DOES INDUSTRIES	9783	MID006006589	3351551	3 DM	L	165	G	02-03-94
ADVISORY SOURCE	10002	MID985619311	3351836	6 DM	L	330	G	05-13-94
BRADEN SUTPHIN INK	9979	MIG000038606	3351858	2 DM	L	110	G	05-02-94
HARVARD INDUSTRIES	9964	MID083940403	3351818	1 TT	L	2100	G	04-26-94
CONTAINER SPECIALTIES	9963 B	MID005361597	3351778	5 DM	L	275	G	04-26-94
WOLVERINE COIL	10008	MID005356969	3351869	1 TT	L	1400	G	05-17-94
SHERWIN WILLIAMS	10011	MID060978038	3351848	5 DM	L	250	G	05-19-94
MIDWEST BRAKE	10012 B	MID169740354	3351832	3 DM	L	150	G	05-19-94
ADRIAN FABRICATORS	9992	MID004350914	3351812	8 DM	L	440	G	05-11-94
LIQUID CONTROL (MELROSE)		ILD984907600	NH042094	5 DM	S	275	G	04-25-94
DEDOES INDUSTRIES	10009	MID006006589	3351761	10 DM	L	500	G	04-29-94
SATURN IND. PAINTING	9874	MIG000031658	3088267	2 DM	L	100	G	03-10-94
MACOMB DAILY	9983	MID980996813	3351866	20 DM	L	1000	G	05-05-94
DETROIT EDISON-FERMI	10001 B	MID087056685	2959359	2 DM	L	110	G	05-12-94
DETREX-ICSD		MID000809889	3350473	25 DM	L	1250	G	05-16-94
FLINT INK (G.R.)	10061	MID005360235	3352176	5 DM	L	275	G	06-10-94
HARVARD INDUSTRIES	10010	MID083940403	3351917	1 TT	L	3050	G	05-18-94
R & B MACHINE TOOL CO	9811	MIG000001623	3088188	7 DM	L	5	G	02-14-94
WISNE AUTOMATION	9817	MID037738408	3351577	2 DM	L	110	G	02-16-94
CARBOLOY INCORPORATED	9806 A	MID044264428	3351567	2 DM	L	100	G	02-04-94
MAGNI INDUSTRIES	9805	MID980821391	3351561	6 DM	L	330	G	02-09-94
DET. NEWSPAPER-DETROIT	9954	MID270012339	3351799	3 DM	L	165	G	04-22-94
ADRIAN FABRICATORS	9945	MID004350914	3351734	11 DM	L	605	G	04-18-94
SHERWIN WILLIAMS	9948	MID060978038	3350472	1 DM	L	50	G	04-20-94
C.L. REICKHOFF	9951	MID006531818	3351807	4 DM	L	200	G	04-21-94
SPEAKER HINES & THOMAS	9773 B	MIG000015068	3350893	1 DM	L	50	G	01-25-94
GELMAN SCIENCES	9814 C	MID985609148	3177240	1 DM	L	55	G	02-15-94
DETROIT EDISON WSC	10323B	MID 000809897	3043625	2 DM	L	110	G	10-28-94
DETROIT EDISON WSC	10323A	MID 000809897	3043625	1 DM	L	55	G	10-28-94
RESEARCH TECHNOLOGIES	9810	MIG000094168	3351501	1 DM	L	65	G	02-11-94
ELDEN INDUSTRIES	9831	MID021093836	3351606	3 DM	L	165	G	02-22-94
IMPERIAL METAL (G.R.)	9937B	MID006018279	2194692	2 DM	L	110	G	04-13-94
DETREX-EUCLID	9950 C	OHD080158702	3351020	11 DM	L	605	G	04-21-94
HOSKINS MFG. (G.R.)	9975	MID980567838	2117098	4 DM	L	220	G	04-29-94
DETREX-EUCLID	10020 B	OHD080158702	3088095	2 DM	L	110	G	05-20-94
ELDEN INDUSTRIES	10031	MID021093836	3351924	3 DM	L	150	G	06-01-94
SUN COATING CO.	10057	MID044258267	3177025	6 DM	L	330	G	06-08-94
JACKSON TUMBLE	10093	MID005324678	3351989	9 DM	L	450	G	06-29-94
ELDEN INDUSTRIES	10151	MID021093836	3351409	2 DM	L	110	G	08-09-94
MICHIGAN SHIPPERS (G.R.)	10196	MID017093675	3177689	1 DM	L	55	G	08-26-94
DETREX- MELROSE	10243C	ILD074424938	3595373	7 DM	L	385	G	09-22-94
ELDEN INDUSTRIES	10295	MID 021093836	3907443	3 DM	L	165	G	10-12-94
JACKSON TUMBLE	10350	MID 005324678	3907293	10 DM	L	500	G	11-02-94
GRACE & WILD STUDIOS	10347B	MID 121631089	3907226	1 DM	L	50	G	11-09-94
IMPERIAL METAL PROD G.R.	10363B	MID 006018279	2194695	2 DM	L	110	G	11-17-94
DETROIT EDISON WSC	10323C	MID 000809897	3043625	2 DM	L	55	G	10-28-94
BENT TUBE	10234	MID005397757	3088204	1 DM	L	55	G	09-20-94
JO-TANG INC. (G.R.)	10238	MID002971539	2386424	8 DM	L	440	G	09-21-94
JONESVILLE PRODUCTS	10145	MID005039961	3189155	3 DM	L	165	G	08-05-94
METAL SERVICES (G.R.)	9801	MIT270012677	1783818	4 DM	L	220	G	02-09-94
KOYO CORPORATION (G.R.)	9884	MID985569318	3352077	10 DM	L	550	G	03-18-94

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PCO INDUSTRIES	9916	MID985569128	3251155	5 DM	L	275	G	04-06-94
COMMERCIAL STEEL	9926	MID005319413	2148726	1 TT	L	1300	G	04-11-94
IMPERIAL METAL (G.R.)	9937A	MID006018279	2194692	4 DM	L	220	G	04-13-94
DAPCO INDUSTRIES	10006	MID985569128	3251156	5 DM	L	275	G	05-16-94
DUO-TANG INC. (G.R.)	10018	MID002971539	2386423	4 DM	L	200	G	05-26-94
DAPCO INDUSTRIES	10089	MID985569128	3251157	4 DM	L	220	G	06-24-94
AMERIKAM (G.R.)	10112	MID006011464	1543289	4 DM	L	200	G	07-13-94
YAMAHA MUSICAL INST (G.R.)	10125	MID985569946	3352234	4 DM	L	210	G	07-25-94
COMMERCIAL STEEL	10148	MID005319413	2148727	1 TT	L	1800	G	08-03-94
DETREX-MELROSE	10168	ILD074424938	3595356	34 DM	L	1870	G	08-17-94
ARROW PROFILE	10183	MID005390695	3351485	4 DM	L	220	G	08-23-94
KOOLANT KOOLERS (G.R.)	10272	MID017168667	3352296	3 DM	L	165	G	09-16-94
DAPCO INDUSTRIES	10256	MID985569128	3251158	4 DM	L	220	G	09-26-94
VERSATILE MFG. CO.	10269	MID982628323	2554100	3 DM	L	165	G	09-30-94
COMMERCIAL STEEL	10308	MID 005319413	2148731	1 TT	L	1300	G	10-20-94
DAPCO INDUSTRIES	10356	MID 985569128	3907237	5 DM	L	295	G	11-14-94
VERSATILE MFG.	10373	MID 982628323	2554101	1 DM	L	55	G	11-15-94
MILLER SMITH (G.R.)	10398B	MID 006025811	3019289	1 DM	L	30	G	12-08-94
MILLER SMITH (G.R.)	10398C	MID 006025811	3019289	1 DM	L	30	G	12-08-94
COMMERCIAL STEEL	10422	MID 005319413	3457173	1 TT	L	1295	G	12-19-94
KOOLAND KOOLERS (G.R.)	10432	MID 017168667	3352432	1 DM	L	55	G	12-20-94
SERVO KINETICS	9873	MID052401890	2037214	1 DM	L	3	G	03-10-94
VERSATILE MFG.	10429	MID 982628323	2554102	3 DM	L	165	G	12-20-94
HATCH STAMPING	10445	MID 005338603	3909761	2 DM	L	110	G	12-28-94
S INSPECTION	10330	MIG 000007244	2554368	1 DM	L	55	G	11-01-94
WOODWORTH IND	10332	MID 981788912	3907270	1 DM	L	50	G	11-01-94
YAMAHA CORPORATION	10446	MID 985569946	3352443	2 DM	L	108	G	12-29-94
PRESTOLITE ELECTRIC	10215	MID016801961	3907048	1 DM	L	55	G	09-06-94
BULMAN PRODUCTS	10399	MID 072588437	3716561	1 DM	L	50	G	12-08-94
SUPERIOR PLATING	9967	MID005348522	494107	1 DM	L	25	G	04-26-94
VERSATILE MFG.	10022	MID982628323	2554097	1 DM	L	55	G	05-18-94
SEALED POWER	10273	MID 043682327	3724403	1 DM	L	55	G	09-30-94
AFM	10062	MID131420176	3351907	2 DM	L	110	G	06-13-94
GENERAL FILTER	10108	MID005318696	3088043	1 DM	L	55	G	07-13-94
VALENITE INC	9853	MID005321484	3268533	1 DM	L	55	G	03-03-94
PRESTOLITE ELECTRIC	9878	MID016801961	2554474	1 DM	L	55	G	03-14-94
BERRIEN TOOL (G.R.)	9955	MID985664739	3177729	1 DM	L	55	G	04-22-94
MILLER SMITH MFG. (G.R.)	10278	MID 006025811	3029288	1 DM	L	55	G	10-19-94
AIRCRAFT PRECISION (G.R.)	9938	MID062217922	3177507	1 DM	L	50	G	04-13-94
MILLER SMITH (G.R.)	9821	MID006025811	2488578	1 DM	L	55	G	02-18-94
AMERIKAM (G.R.)	10420	MID 006011464	3177695	2 DM	L	100	G	12-09-94
NATIONAL STEEL-GREAT LKS	10028	MID004320479	3351850	2 DM	L	110	G	05-26-94
ALKEN-ZIEGLER (G.R.)	10042	MID021033378	3501024	1 DM	L	55	G	06-10-94
NILES PRECISION (G.R.)	9886	MID052867405	2714213	2 DM	L	110	G	03-18-94
MILLER SMITH (G.R.)	10016	MID006025811	2488580	1 DM	L	55	G	05-26-94
ALKEN-ZIEGLER (G.R.)	9905	MID921033378	3501023	1 DM	L	55	G	03-22-94
HI-MILL MANUFACTURING	10134	MID053417142	3351379	1 DM	L	55	G	07-29-94
UNIFLEX INC.,	10392	MID 096968078	3909596	1 DM	L	50	G	12-07-94
LEN-ZIEGLER (G.R.)	9798	MID021033378	3501022	1 DM	L	55	G	02-09-94
MILLER SMITH (G.R.)	10193	MID006025811	3019287	1 DM	L	55	G	08-26-94
METAL CABINET COMPANY	9784	MID270011877	2775598	1 DM	L	55	G	02-03-94
VERSATILE	10198	MID982628323	2554099	2 DM	L	110	G	08-26-94

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GENERATOR	DETREX CNTRL #	CUSTOMER MID #	MANIFEST #	NO./TYPE CONTAIN.	PHYS. (L/S)	MANIFEST QTY.	MAN. UNIT	DATE OF RECEIPT
MATERIAL TESTING (G.R.)	10418	MIG 000004860	2653288	1 DM	L	55	G	12-14-94
RSATILE MFG.	10052	MID982628323	2554098	2 DM	L	110	G	06-07-94
NILES PRECISION CO., (G.R.)	10343	MID 052876405	2714215	3 DM	L	165	G	11-09-94
MILLER SMITH (G.R.)	10262	MID006025811	3019286	1 DM	L	55	G	09-29-94
YAMAHA MUSICAL INST (G.R.)	10040 B	MID985569946	3352172	1 DM	L	55	G	06-10-94
PRESTOLITE ELECTRIC	10324	MID 016801961	3177439	1 DM	L	55	G	10-31-94
MILLER SMITH (G.R.)	9918	MID006025811	2488579	1 DM	L	55	G	04-06-94
H & S PROPELLAR SHOP	10307	MIG 000003522	3907345	1 DM	L	55	G	10-19-94
PRESTOLITE BEECH	10280	MID 016801961	3907417	1 DM	L	55	G	10-03-94
THOMPSON MCCULLY-WHIT	10098	MID021093729	3351200	1 DM	L	55	G	06-30-94
PRESTOLITE ELECTRIC	10146	MID016801961	3351389	1 DM	L	55	G	08-04-94
UNIFLEX INC.	10109	MID096968078	3177185	1 DM	L	55	G	07-13-94
DAPCO INDUSTRIES	9794	MID985569128	3251154	4 DM	L	220	G	02-11-94
UNIFLEX INC.	9871	MID096968078	3351654	1 DM	L	50	G	03-09-94
BEAVER PRECISION PROD	10281	MID 005355383	3088226	1 DM	L	55	G	10-04-94
H & S PROPELLER SHOP	10026	MIG000003522	3177088	1 DM	L	55	G	05-24-94
CAYMAN CHEMICAL	10444B	MID 985664853	3909729	1 DM	L	50	G	12-28-94
SPIRAL INDUSTRIES	10202	MID048078984	2841760	1 DM	L	55	G	08-25-94
MICRO MIRROR	10055	MID981783566	3351929	2 DM	L	110	G	06-08-94
METAL CABINET	10114	MID270011877	2775599	2 DM	L	110	G	07-22-94
WOODWORTH INC	10115	MID000031377	3088193	1 DM	L	55	G	07-19-94
FAYETTE TUBULAR	10437	MID 042158329	3909687	14 DM	L	770	G	12-27-94
VERSATILE MFG.	9947	MID982628323	2554096	3 DM	L	165	G	04-20-94
METAL CABINET	10346	MID 270011877	3907232	1 DM	L	55	G	11-08-94
IFLEX INCORPORATED	10287	MID 096968078	3907442	1DM	L	55	G	10-09-94
PRESTOLITE ELECTRIC	9828	MID016801961	2554473	1 DM	L	55	G	02-21-94
MATERIALS TESTING (G.R.)	9976	MIG000004860	2653287	1 DM	L	55	G	04-29-94
STANDARD PORTABLE (ESG)	9997	NYD002100881	3048477	1 DM	L	55	G	05-11-94
SELFRIEDGE PLATING	9826	MID054878580	3351599	3 DM	L	150	G	02-18-94
KOYO CORPORATION (G.R.)	9884	MID985569318	3352077	1 DM	L	55	G	03-18-94
VALENITE INC	10291	MID 005321484	3268599	1 DM	L	50	G	10-07-94
VALENITE-MADISON	10175	MID005321484	3268539	1 DM	L	55	G	08-18-94
SEALED PWR-HARVEY (G.R.)	10192	MID043682327	3479807	2 DM	L	110	G	08-26-94
SEALED PWR-HARVEY (G.R.)	9759	MID043682327	3251248	4 DM	L	220	G	02-01-94
SPIRAL INDUSTRIES	10071	MID048078984	2841759	1 DM	L	55	G	06-15-94
MILLER SMITH (G.R.)	10111	MID006025811	3019285	2 DM	L	110	G	07-13-94
ABRASIVE DIAMOND TOOL	9808	MID005884289	3351555	1 DM	L	55	G	02-10-94
VERSATILE MFG.	9868	MID982628323	2554095	3 DM	L	165	G	03-09-94
BENT TUBE	9891	MID005397757	3177291	2 DM	L	110	G	03-21-94
ALKEN-ZIEGLER (G.R.)	10191	MID021033378	3501025	1 DM	L	55	G	08-26-94
UNIFLEX INC.	9960	MID096968078	3177177	1 DM	L	50	G	04-22-94
THOMPSON MCCULLY-WHIT	10210	MID021093729	3907046	1 DM	L	55	G	09-02-94
PORT CITY (G.R.)	10320	MID 982066813	3156876	1 DM	L	55	G	10-28-94
PORT CITY (G.R.)	9820	MID982066813	3156862	1 DM	L	55	G	02-18-94
GENERAL FILTER	10353	MID005318696	3088044	2 DM	L	110	G	11-11-94
PARK DETROIT	10284	MID005327655	3907411	1 DM	L	55	G	10-05-94
NIAGARA (ESG)	10138	NYD048630230	3622181	1 DM	L	55	G	08-03-94
PORT CITY (G.R.)	10039	MID982066813	3156868	1 DM	L	55	G	06-10-94
(AS INSTRUMENTS (G.R.)	9797	MID053668018	1870649	3 DM	L	165	G	02-09-94
FRIMORE-SEDCO	10067 B	MID005050794	3351955	1 DM	L	55	G	06-14-94
JONESVILLE PRODUCTS	10231	MID005039961	3907095	2 DM	L	110	G	09-19-94
MOTOR PRODUCTS	10007	MID061868048	3350858	2 DM	L	110	G	05-17-94

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GENERATOR	DETREX CNTRL #	CUSTOMER MID #	MANIFEST #	NO./TYPE CONTAIN.	PHYS. (L/S)	MANIFEST QTY.	MAN. UNIT	DATE OF RECEIPT
LENITE-MADISON	10021	MID005321484	3288538	1 DM	L	50	G	05-19-94
ALED POWER (G.R.)	9796	MID043682327	3251251	2 DM	L	110	G	02-09-94
PRESTOLITE ELECTRIC	10167	MID016801961	3351459	2 DM	L	110	G	08-16-94
AJAX - BRIGHTON	9870	MID086741931	3351624	1 DM	L	50	G	03-09-94
AMERIKAM (G.R.)	10236	MID006011464	3177518	3 DM	L	150	G	09-21-94
THOMPSON MC CULLY	10313	MID 021093729	3088350	1 DM	L	55	G	10-26-94
KENT COUNTY ROAD COMM	10274	MID 020888244	2365519	1 DM	L	55	G	10-03-94
WOODWORTH INC	9963	MID981788912	3351804	2 DM	L	80	G	04-25-94
MOTOR PRODUCTS	10289	MID 061868048	3907464	2 DM	L	110	G	10-07-94
SEALED POWER (G.R.)	10397	MID 043682327	3724418	2 DM	L	110	G	12-08-94
MOTOR PRODUCTS	10200	MID061868048	3351494	2 DM	L	110	G	08-25-94
HI-MILL MANUFACTURING	10217	MID005341714	3907090	2 DM	L	110	G	09-09-94
PORT CITY (G.R.)	9972	MID982066813	3156866	1 DM	L	55	G	04-29-94
PRESTOLITE ELECTRIC	10056	MID016801961	2554475	2 DM	L	110	G	06-08-94
H & S PROPELLER SHOP	9782	MIG000003522	3177087	2 DM	L	110	G	02-03-94
AFM	10166	MID131420176	3351908	4 DM	L	220	G	08-16-94
MOTOR PRODUCTS	10090	MID061868048	3351621	2 DM	L	110	G	06-29-94
PORT CITY (G.R.)	10250	MID982066813	3156875	1 DM	L	55	G	09-23-94
PORT CITY (G.R.)	9885	MID982066813	3156864	1 DM	L	55	G	03-18-94
KOPACZ INDUSTRIAL	10435	MID 061880803	3740984	2 DM	L	110	G	12-22-94
CADILLAC ASPHALT	10162	MID005321443	3351408	1 DM	L	85	G	08-12-94
ARROW PROFILE	10082	MID005390695	3351256	6 DM	L	330	G	06-20-94
JACKSON FLEXIBLE	10218	MIG000007541	2554198	1 DM	L	50	G	09-07-94
BENT TUBE	9725	MID005397757	3177173	2 DM	L	110	G	01-26-94
EX BRASS CORP	9780	MIG000001704	1848712	2 DM	L	100	G	02-01-94
PRODUCTION PLATING	9980	MID981090657	3088009	2 DM	L	110	G	05-03-94
DIAMOND CHROME	10336	MID 005344973	3088225	2 DM	L	110	G	11-08-94
AMERIKAM (G.R.)	9861	MID006011464	1543285	4 DM	L	200	G	03-09-94
RUBBER & PLASTICS	9869	MID091653944	3177296	2 DM	L	73	G	03-09-94
GENERAL FILTERS	9928	MID005318696	3088040	2 DM	L	110	G	04-12-94
MOTOR PRODUCTS	9898	MID061868048	3351724	2 DM	L	110	G	03-29-94
JONESVILLE PRODUCTS	9855	MID005039961	2126049	2 DM	L	110	G	03-07-94
J M L PAINTING	10450	MID 068810373	3909749	1 DM	L	50	G	12-29-94
METAL SERVICES (G.R.)	10194	MIT270012677	3177680	4 DM	L	220	G	08-26-94
MOTOR PRODUCTS	10133	MID061868048	3351199	2 DM	L	110	G	07-29-94
AMERIKAM (G.R.)	10170	MID006011464	3177510	3 DM	L	165	G	08-18-94
JACKSON FLEXABLE	10381	MIG 000007541	2554199	1 DM	L	55	G	11-30-94
WAYNE COUNTY	10005	MID980613293	3088289	1 DM	L	55	G	05-13-94
THOMPSON-MCCULLY-BELLE	9978	MID052528768	3088120	1 DM	L	50	G	05-02-94
PRESTOLITE BEECH ELEC	10370	MID 016801961	3177438	2 DM	L	110	G	11-17-94
VALENITE-MADISON	10434	MID005321484	3268591	2 DM	L	110	G	12-21-94
ESSEX BRASS	9944	MID000001704	1848713	1 DM	L	50	G	04-13-94
AFM	10029	MID131420176	3351906	8 DM	L	440	G	05-26-94
PIONEER TRANSFORMER	9924	OHD000003591	3351746	2 DM	L	110	G	04-11-94
MOTOR PRODUCTS	9966	MID061868048	3351782	2 DM	L	110	G	04-20-94
NORTHERN PRECISION (G.R.)	10045	MID112831375	1530757	13 DM	L	715	G	06-10-94
WOODWORTH INC	9793	MID981788912	3088190	2 DM	L	100	G	02-16-94
DUO-TANG INC. (G.R.)	9858	MID002971539	2386422	2 DM	L	100	G	03-09-94
ACZ	10214	MID061880803	3088216	2 DM	L	110	G	09-02-94
G.R. POLISHING (G.R.)	10041	MID000001662	2194857	2 DM	L	110	G	06-10-94
PRESTOLITE ELECTRIC	10406	MID 016801961	3909610	2 DM	L	110	G	12-12-94
SEALED POWER (G.R.)	10362	MID 043682327	3724413	3 DM	L	165	G	11-17-94

AA-BB Compliance Response
List of Informational References and Sources.

- 1. Chemical Engineers' Handbook, fifth edition. Perry and Chilton, 1973. McGraw-Hill.**
- 2. Chlorohydrocarbon Solvents (Reprinted from Industrial and Engineering Chemistry). E.W. McGovern, E.I. DuPont DeNemours and Co. Inc., 1943.**
- 3. DuPont Freon, Solvents That Meet Today's Cleaning Needs (Bulletin FS-21). E.I. DuPont DeNemours and Co., Inc. 1984**
- 4. Freon Solvent Formulation Data (Bulletin FST-5). E.I. DuPont DeNemours and Co., Inc. 1986**
- 5. APTI Course 415 Control of Gaseous Emissions Student Manual. Air Pollution Training Institute, USEPA, Research Triangle Park. December, 1981**
- 6. Chemical Process Safety: Fundamentals with Applications. Crowl and Louvar. Prentice Hall 1990**
- 7. Excerpt from AP-42 furnished by Ohio EPA.**

AA-BB Compliance Response
Design Considerations for Maximum Emission Rate

Assumptions:

1. Assume each waste stream has an average concentration, as calculated from 1991 Operating data, and the concentration does not change during the distillation process. However, for maximum emission rate, assume 100% solvent as the waste.
2. Assume that the boiling point for the wastes processed in the Detrex stills is the steam boiling point for each respective solvent, and that the boiling point does not change during the distillation process.
3. Assume that the boiling point for the wastes processed in the DCI still is the azeotropic boiling point for the respective solvent, and that ~~this~~ boiling point remains constant during the distillation process.
- 4A. Assume that the minimum temperature of the condenser water tower cooling water is 85°F throughout the year.
- 4B. Assume that the minimum temperature of the condenser City water cooling water is 54°F throughout the year.
5. Assume that the hazardous waste storage tanks associated with the distillation process are emptied prior to changing the type of waste solvent being processed. (Maximum vapor space)
6. Assume that the ambient temperature inside the building is 85°F throughout the year.

II. B 3

Design Analysis, Specifications, Drawings, Schematics, and P& ID's on the control device:

The design analysis of the control device included the following considerations:

Vent Stream Composition: 0 - 1,000 ppm of Volatile Organic Compounds (Trichloroethylene, 1,1,1 Trichloroethane, Perchloroethylene, Methylene Chloride and/or Trichlorotrifluoroethane), the balance of the stream is air.

Constituents and Concentrations:

<u>Constituent</u>	<u>Concentrations (ppm)</u>
Trichloroethylene	0-1,000
1,1,1 Trichloroethane	0-1,000
Perchloroethylene	0-1,000
Methylene Chloride	0-1,000
Trichlorotrifluoroethane	0-1,000

Flow Rate: Design; 3000 CFM. Rated maximum 5,000

Relative Humidity: 0-99% range

Temperature: 40-120° F range

Design exhaust vent stream organic concentration: 0-100 ppm

Design number of carbon beds: 2

Design capacity of carbon beds: 2800 lbs GAC /268 lbs organic per bed per regeneration

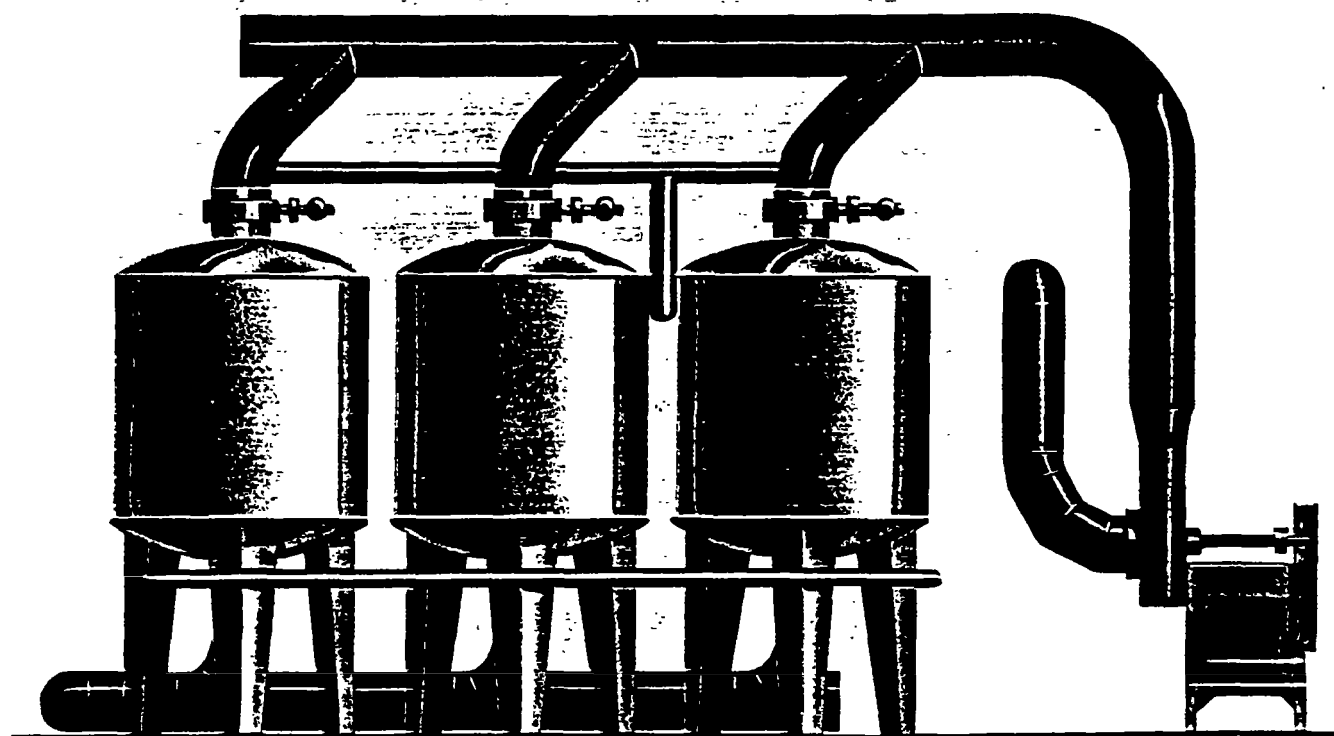
Design total steam flow for bed regeneration: 900 lbs

Duration of Steaming / Cooling / Drying cycles: 60/ 15hr / 165 minutes / cycle

Design Carbon Bed Temperature after regeneration: 210° F

Design Service Life of Carbon: 2 years (min.)

SOLVENT VAPOR RECOVERY MODULES



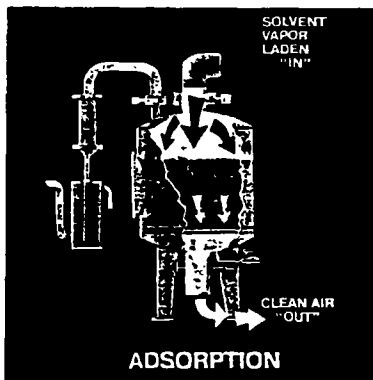
DETREX

Carbon adsorption reclaims solvent vapors which normally would be dissipated to the atmosphere. The method is one of the most efficient and cost effective pollution control/solvent recovery processes available.

Carbon is the preferred material used in adsorption systems because of the unique surface-tension properties it exhibits. Due to its non-polar surface, activated carbon will preferentially attract other non-polar materials such as organic solvents rather than polar

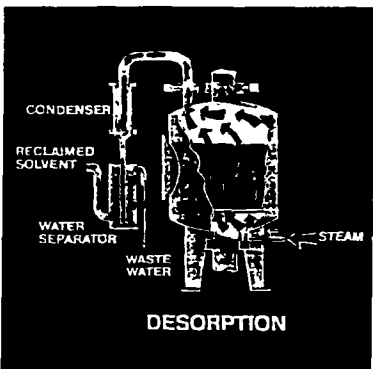
materials like water. Carbon's granular multi-facet geometry also possesses tremendous surface area – with one pound having an area greater than 750,000 sq. ft. This characteristic allows carbon to adsorb up to 30% of its own weight in solvent.

Solvent recovery consists of passing solvent laden air through an activated carbon bed. The activated carbon captures the solvent molecules allowing residual denuded air to be exhausted to the atmosphere.



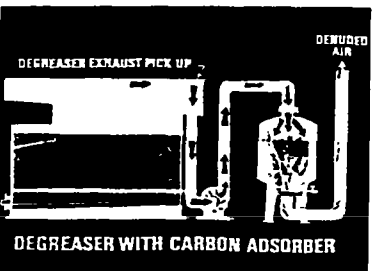
Adsorption

A blower fan directs solvent laden air from the exhaust source to the activated carbon bed. The carbon adsorbs the solvent vapor and residual purified air is exhausted through the ventilation duct. The process continues until the entire carbon bed is saturated.



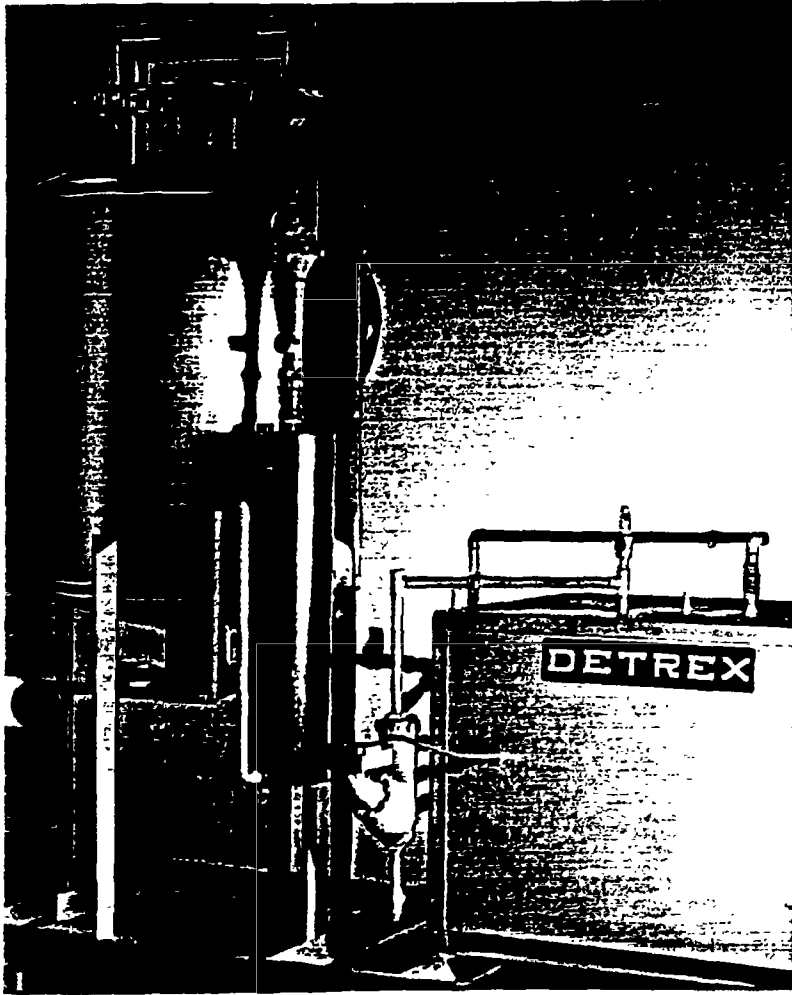
Desorption

At the end of the adsorption cycle, the unit switches to desorption and the supply of solvent vapor/exhaust is shut off. The tank is injected with steam which passes through the carbon bed, vaporizing the adsorbed solvent. The mixture of steam and solvent then passes through a condenser and a water separator. The recaptured solvent is now ready for reuse and the water is channeled for treatment or disposal.



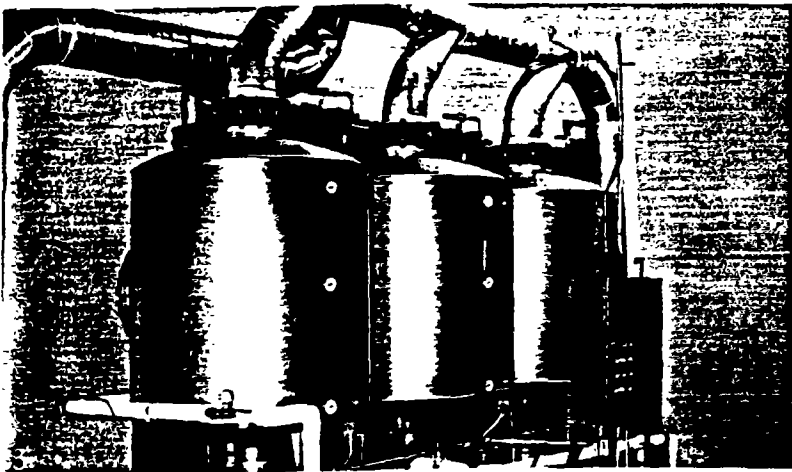
System Purge/ Cool-down

As hot, wet carbon will not adsorb solvent, the unit must be dried and cooled before start-up of the next adsorption cycle. Ambient air is drawn through the system, which dries and cools the carbon bed. At the end of the cycle the unit shifts into stand-by mode ready for the next adsorption cycle.



THE DETREX SYSTEM

Detrex offers a full line of solvent recovery equipment for a variety of industrial applications. Our versatile Solvent Vapor Recovery Modules (SVRMs) form an expandable system that can grow as your requirements grow. SVRMs are designed for use with most chlorinated and fluorinated solvents and are ideal for any operation using as little as 200 gallons of solvent per month. Salvaging up to 98% of the solvent normally lost, the system quickly pays for itself in solvent savings. In addition, SVRMs help you comply with EPA and OSHA regulations while providing a better working environment for your employees.



SVRMs require no operator. The entire system is monitored and controlled by a solid state programmable microprocessor. This unit oversees all cycle shifts including adsorb, desorb, system purge and cool-down.

Superior air handling methods minimize pressure drop and provide swift uniform distribution of solvent laden air over the entire carbon bed. Quality materials and energy efficiency are an integral part of the design. Tanks are fabricated of 304 heliarc welded stainless steel and special wafer valves provide positive damper control at each cycle shift. A patented closed loop air system is an available option. This system returns denuded air to the source, eliminating costly air make-up heating and cooling.

Single bed system with packaged generation source.

2. All valves mounted externally for ease of maintenance and visual inspection.
3. Three bed system for volume operations.

Optional T.T.O. Tank Allows Direct Discharge

To assist you in complying with new regulations governing waste water disposal, Detrex has designed a special "T.T.O." (Total Toxic Organics) water treatment unit for use with solvent vapor recovery modules. The two stage separator/filtration process removes dissolved solvent from effluent water by heat

injection, aeration and carbon filtration. This process eliminates the need for further distillation or outside reclamation service. Detrex also offers a complete line of engineered cooling tower and water chiller systems for use with SVRMs and related cleaning system equipment.

Nationwide Service/Turnkey Installation

Your partnership with Detrex continues well beyond the purchase of equipment. Factory-supervised equipment start-up and orientation seminars are provided to assure operating personnel become completely familiar with your new system.

Turnkey installation is also available in the continental United States and parts of Canada. A nationwide network of skilled field service technicians is on-call to provide

responsive in-plant product support.

To determine if carbon adsorption is the right control method for your operation, contact your local Detrex representative for a no-cost appraisal. A field engineer will visit your facility to examine and test your equipment. After laboratory analysis a written report detailing the test results will be submitted for your evaluation.

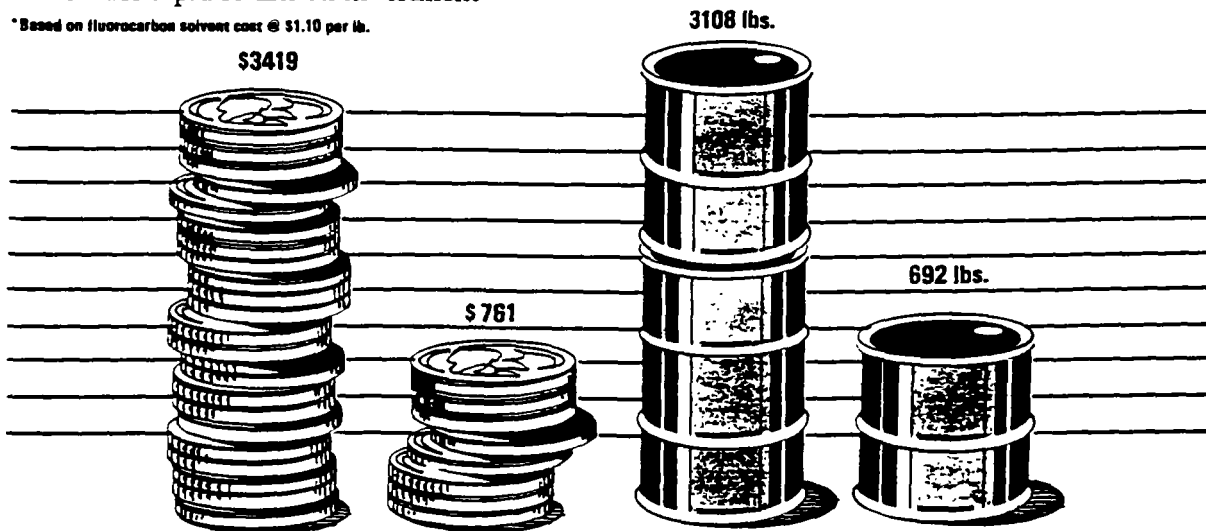
Solvent Recovery Applications

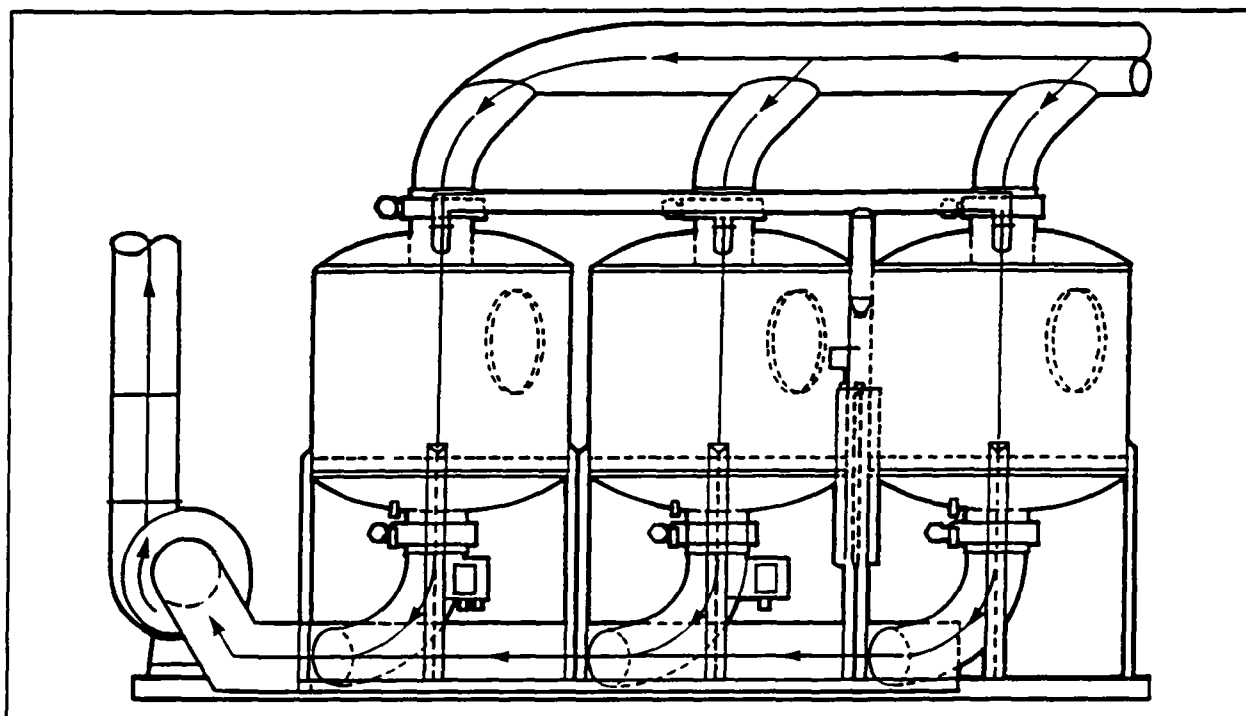
- Open top/conveyorized degreasers
- High-speed strip degreasers
- Inline electronic cleaning systems
- Cold solvent dip tanks
- Paint spraying operations
- Ground water remediation
- Hot and cold spray cabinets
- Scrap metal processing
- Automotive parts rebuilding
- Aerospace flushing operations
- Medical component assembly rooms

TYPICAL DETREX SVRM INSTALLATION:

- Reduces solvent emissions by up to 98%
- Reduces solvent consumption/cost by 78%*
- Provides rapid return on investment

*Based on fluorocarbon solvent cost @ \$1.10 per lb.





SPECIFICATIONS: SOLVENT VAPOR RECOVERY MODULES

SIZE	A	B	C	D	MAX CFM	INLET DUCT	OUTLET DUCT	STEAM INLET	WATER INLET	WATER OUTLET	BLOWER H.P.	STEAM REQ'D	WATER REQ'D		WEIGHT		
													85°F IN	70°F IN			
3.0	6'-11"	2'-8"	11'-8"	4'-1"	700	8	8	1	1	¾	1	¾	3	200#	15GPM	8GPM	1000
3.5	7'-11"	2'-8"	12'-8"	4'-7"	960	10	10	1¼	1¼	1	1¼	1	3	300#	23GPM	12GPM	1200
4.0	8'-11"	2'-8"	12'-8"	5'-1"	1250	12	12	1½	1½	1¼	1½	1¼	5	500#	40GPM	20GPM	1500
5.0	11'-5"	2'-8"	12'-8"	6'-1"	1950	14	14	2	2	1¼	2	1¼	7.5	700#	55GPM	28GPM	2000
6.5	13'-11"	3'-8"	13'-10"	7'-8"	2800	16	16	2	2	1½	2	1½	10	900#	70GPM	35GPM	2600

A. Length

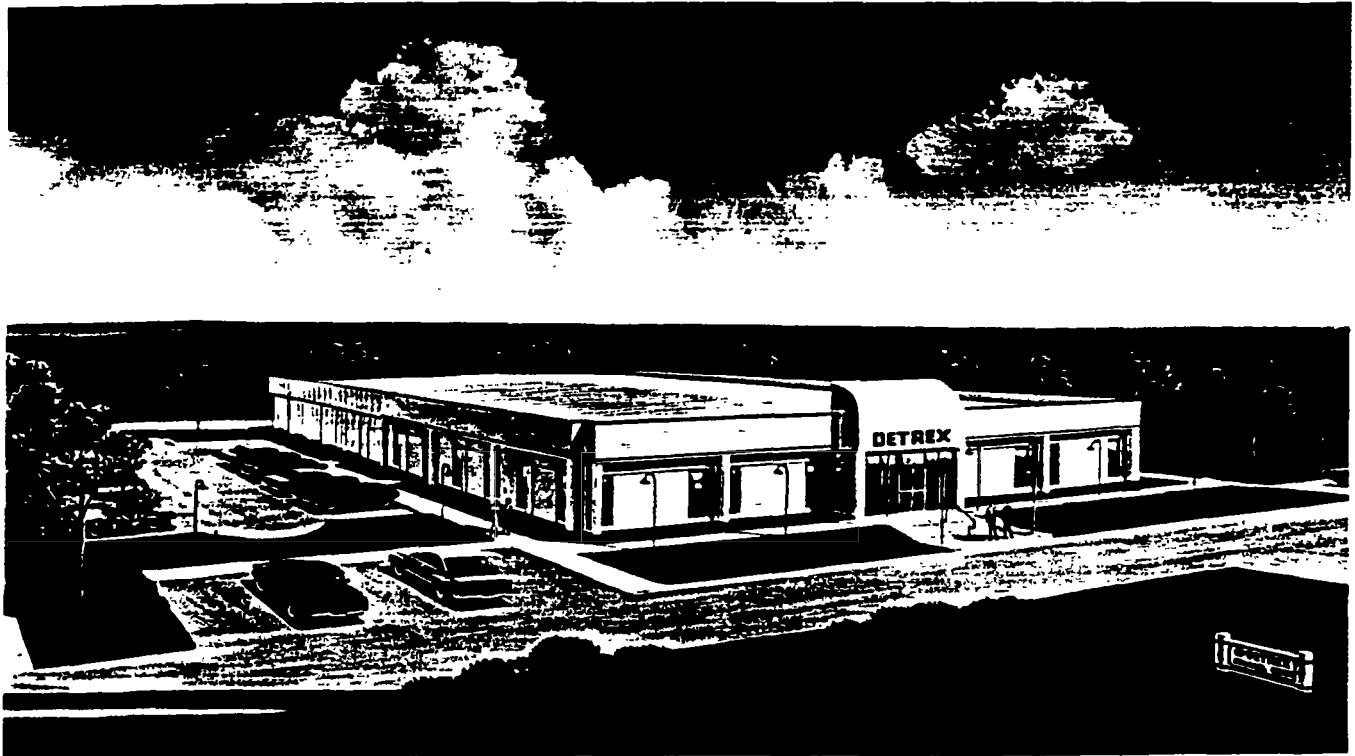
B. Fan and receiver tank assembly

C. Base to centerline of inlet air duct

D. Width

Standard Features

- Entire system micro-processor controlled
- Tanks fabricated of heliarc welded 304 stainless steel
- Tank top provided with gasketed access plate for internal accessibility
- Lower ppm test ports
- Carbon supported by 304L stainless steel support screen
- Wafer type air valves with 316 stainless steel discs and teflon seats
- Stainless steel steam/vapor ducts
- 304L stainless steel water separator
- All copper solvent piping (stainless available)
- Minimum pressure drop air flow ducts
- NEMA 12 electrical system with liquid tight conduit



Detrex Technical Center
Bowling Green, KY

DETREX

DETREX CORPORATION
325 EMMETT AVENUE, BOWLING GREEN, KY 42101
Telephone: 502/782-1511 FAX: 502/781-3425

DETREX CORPORATION

DETREX SOLVENT VAPOR RECOVERY SYSTEM

MODULAR DESIGN FEATURES

MODEL SVRM SERIES

The module concept allows system flexibility regarding single or multiple modular applications.

This allows standard modules to be utilized in all applications.

As field conditions change, extra modules can be easily added in the field to gain additional capacity.

High recovery rates are achieved because:

- Face velocities across carbon bed are between 50 and 100 lfm maximum.

- Hard carbon pellets contained in vessel.

- Deep carbon bed (42" minimum)

- Sized by Detrex specialist to guarantee performance.

- Programmable controller monitors adsorb, desorb, and cool-down functions for concise time cycle.

Stock module allows short delivery for each application.

Five (5) standard size modules allow easy "customizing" to suit application.

Detrex designed air handling ducts allow low pressure drop, resulting in efficient exhausting of source and quiet operation.

EACH STANDARD MODULE IS EQUIPPED WITH THE FOLLOWING FEATURES:

- 1) Tank fabricated of 304 stainless steel, heliarc welded, with domed end plates and furnished with bolted round access plate on side.
- 2) Each top provided with gasketed access plate for internal accessibility.
- 3) Lower ppm test ports.
- 4) Provided with hard activated carbon pellets.

DETREX CORPORATION

SVRM Modular Design Features

Page 2

- 5) Carbon supported by 304 stainless steel support screen. *12ga ~ 1/4" holes*
- 6) Air dampers - All dampers furnished on this system are air operated wafer type valves. The disc is fabricated of 316 stainless steel provided with a Teflon liner.
- 7) Vapor Control Valves -
- Sizes 3.0 & 3.5 are furnished with air operated ball valves (bronze with stainless steel balls and Teflon seals)
- Sizes 4.0 - 6.5 are furnished with air operated wafer type valves with the disc of 316 stainless steel provided with a Teflon liner.
- 8) Steam/Vapor Ducts - Connecting duct from carbon vessel to condenser.
- Sizes 3.0 & 3.5 are fabricated of copper.
- Sizes 4.0 - 6.5 are fabricated of stainless steel.
- 9) Condenser is bronze shell with copper tube heat exchanger provided with copper piping. Condenser sized for use with 85° F. tower water. (Optional stainless steel condenser and piping are available.)
- 10) Water separator fabricated of 304 stainless steel.
- 11) All solvent piping to be copper (stainless steel optional).
- 12) Air flow ducts designed for minimum pressure drop (inlet and outlet).
- 13) Electrical - NEMA 12 panel complete with pilot lights and graphic display indicating condition of module(s) (adsorb, desorb, and cool down). All conduit to be liquid tight.
- 14) Modules are controlled by an Allen-Bradley "SLC" Programmable Controller. This allows future addition of modules by simply adding an expansion unit. The controller eliminates relays, timers, etc.
- 15) Steam controls -
- a) Steam pressure regulator provided if initial pressure is above 30 psi. (optional). Flow control valve provided if below 30 psi with gauges.
- b) Steam piping provided with steam traps on drip leg(s).
- c) Manifold steam piping provided with air operated ball valves for steam injection.

DETREX CORPORATION

SVEM Modular Design Features

Page 3

ALL DETREX SOLVENT VAPOR RECOVERY SYSTEMS INCLUDE THE FOLLOWING:

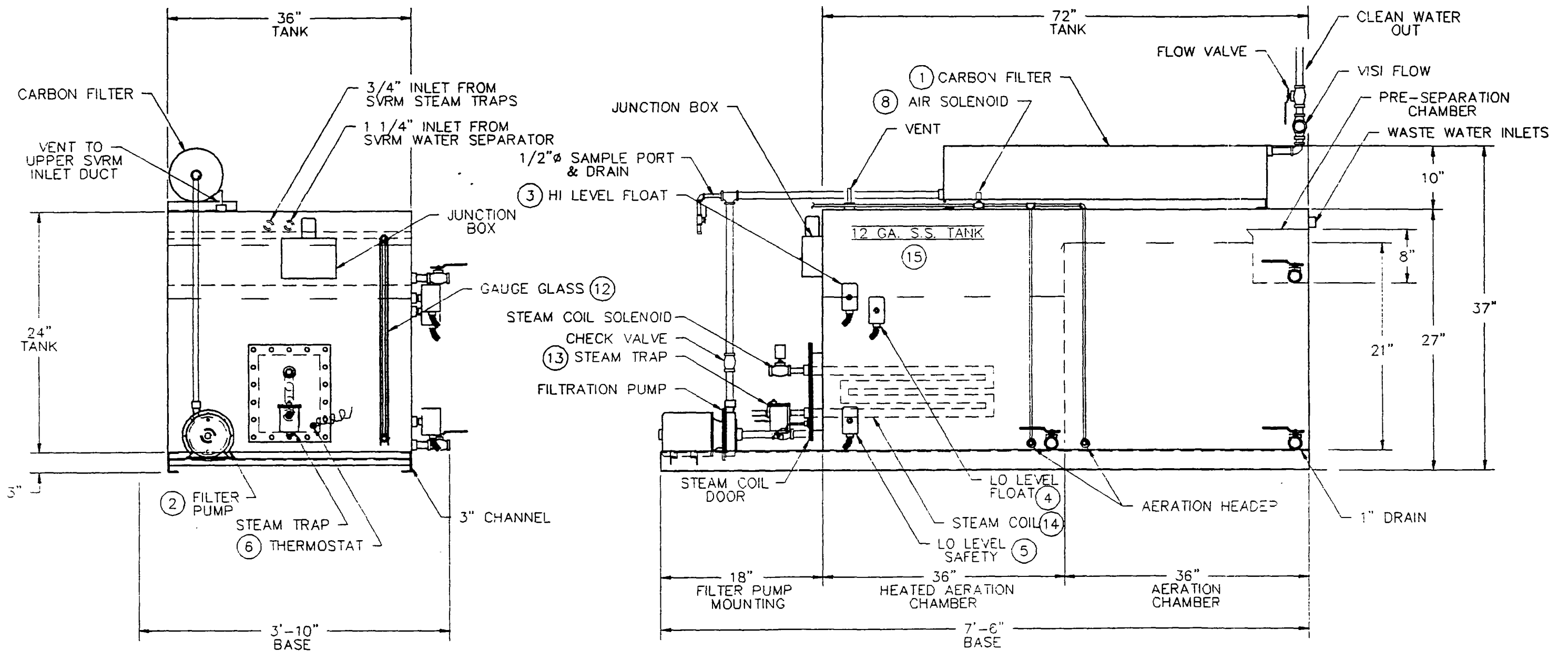
Start-up monitoring of incoming solvent laden air and outgoing denuded air (ppm analysis). A second monitoring of system is included within three (3) months after start-up.

Actual field tests have shown that denuded air averages 5 to 10 ppm over adsorption cycle. EPA regulations require a maximum of 25 ppm averaged throughout complete cycle (adsorb-desorb).

On-sight installation by Detrex specialist or factory assembled with Detrex start-up supervision.

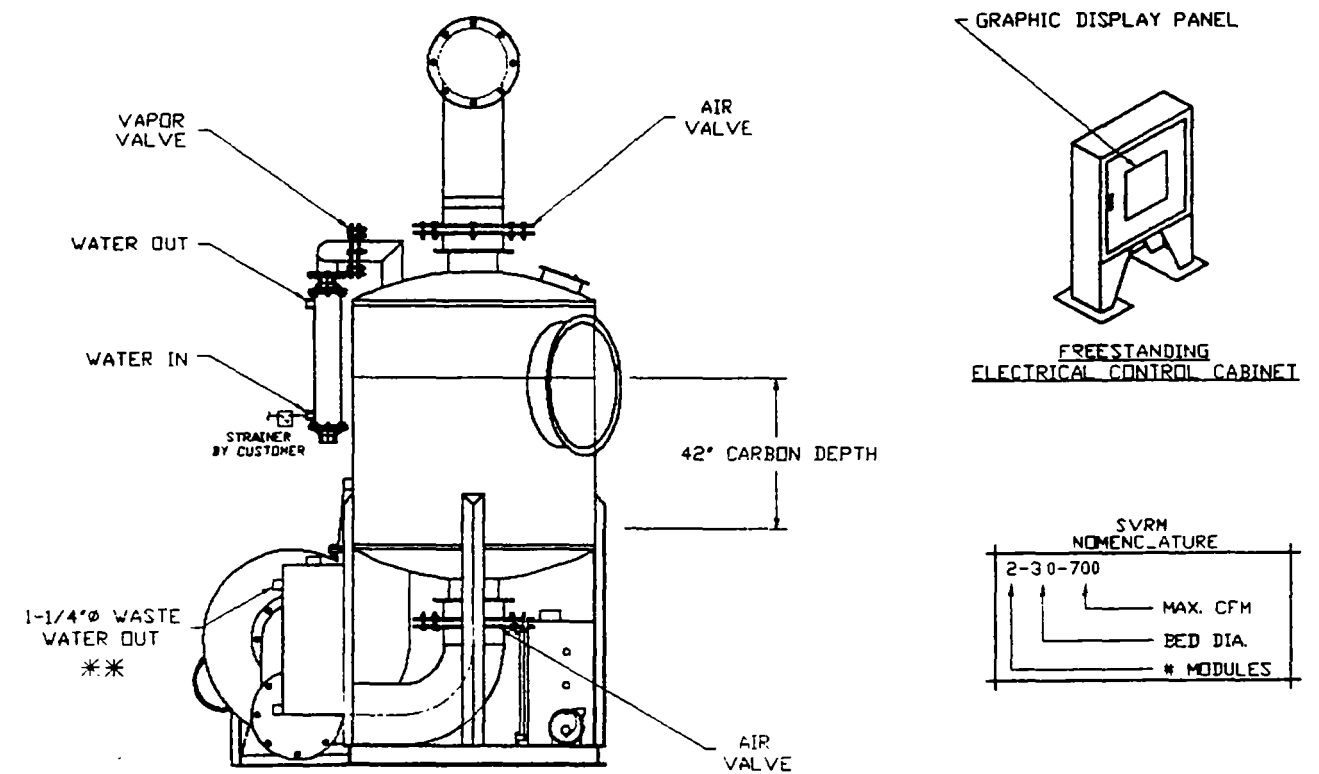
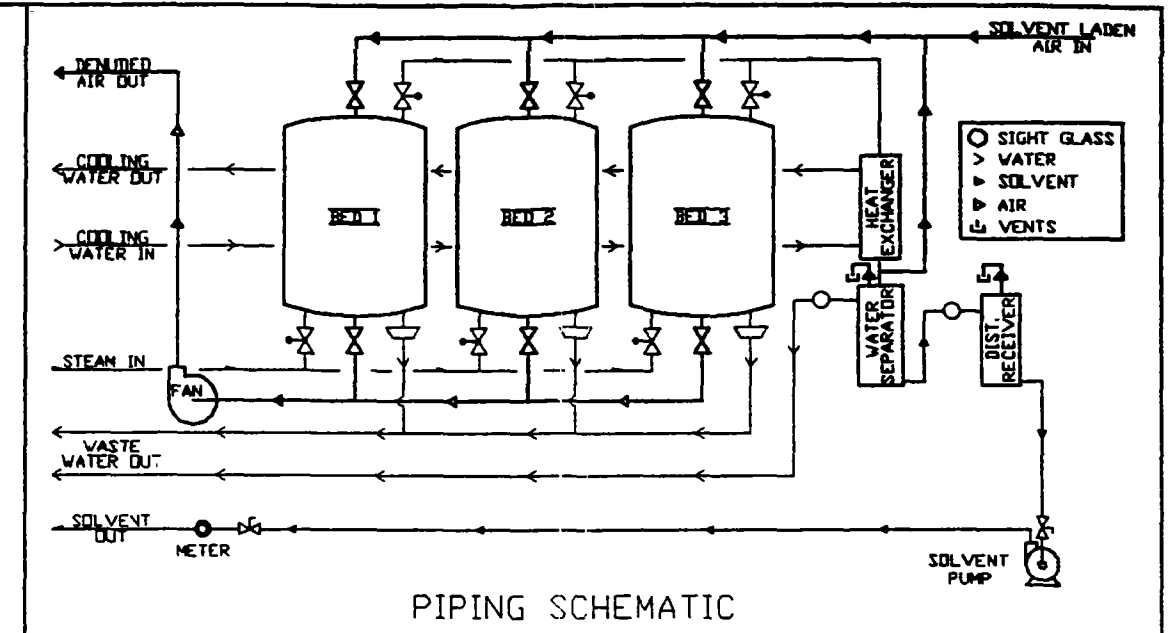
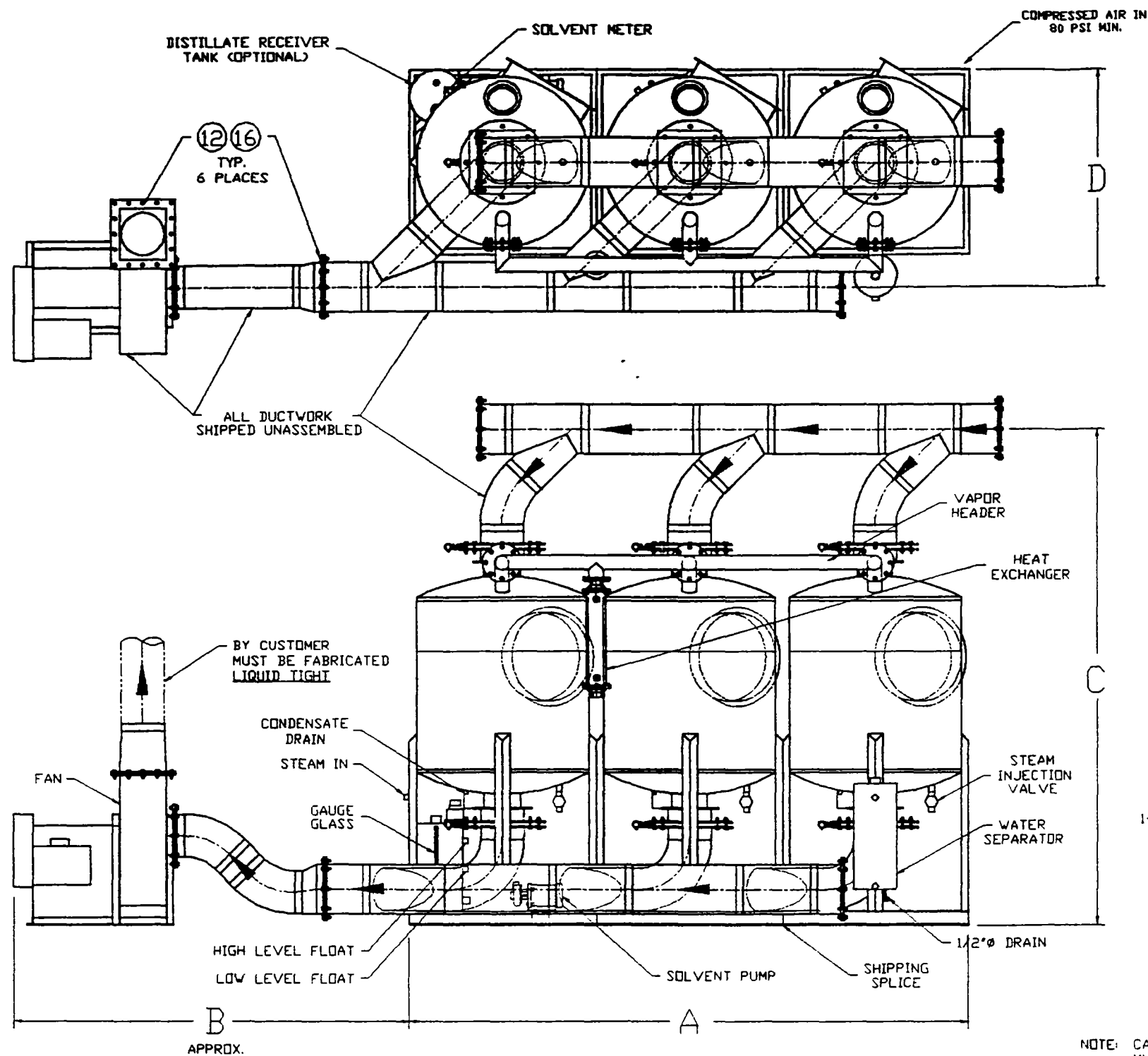
Our specialists review each system to assure proper air flow (cfm) and carbon amounts (lbs.) for each specific application.

DETREX - WASTE WATER TREATMENT SYSTEM

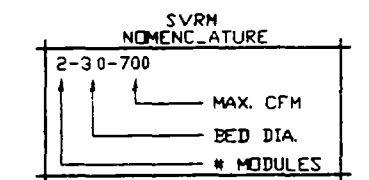


8	1		SKINNER 1/2" AIR SOLENOID VALVE	16	1		
7	1		SKINNER 3/4" STEAM SOLENOID VALVE	15	1		12 GAUGE S.S. TYPE 304 TANK
6	1		THERMOSTAT	14	1		3/4" S.S. STEAM COIL
5	1		PENN LOW LEVEL SAFETY FLOAT	13	1		STEAM TRAP (3/4"ø)
4	1		PENN LOW LEVEL FLOAT	12	1		GAUGE GLASS (30 C/C)
3	1		PENN HIGH LEVEL FLOAT	11			
	1		DUNHAM BUSH - 1/2HP-A5 (VITON SEAL)	10	1		
	1		WATER PHASE CARBON FILTER	9			
ITEM	QTY	DETREX P/N	MFG. DESCRIPTION & P/N	ITEM	QTY	DETREX P/N	MFG. DESCRIPTION & P/N

DATE	CHANGE	BY	DR	EDDER	THIS PRINT PROPERTY OF	C.A.D. FILE
1/4/90	REDRAWN	EDDER	CK	GERARD	DETREX TECHNICAL CENTER	WWTSTANK
					WOLINE GREEN, KENTUCKY	PROP NO. 1
					WASTE WATER TREATMENT	
					SYSTEM	
					FOR:	DRG. 1
						B-12354-E



FREESTANDING ELECTRICAL CONTROL CABINET



NOTE: CARBON SHIPPED PACKAGED PARTS. MUST BE ADDED IN FIELD

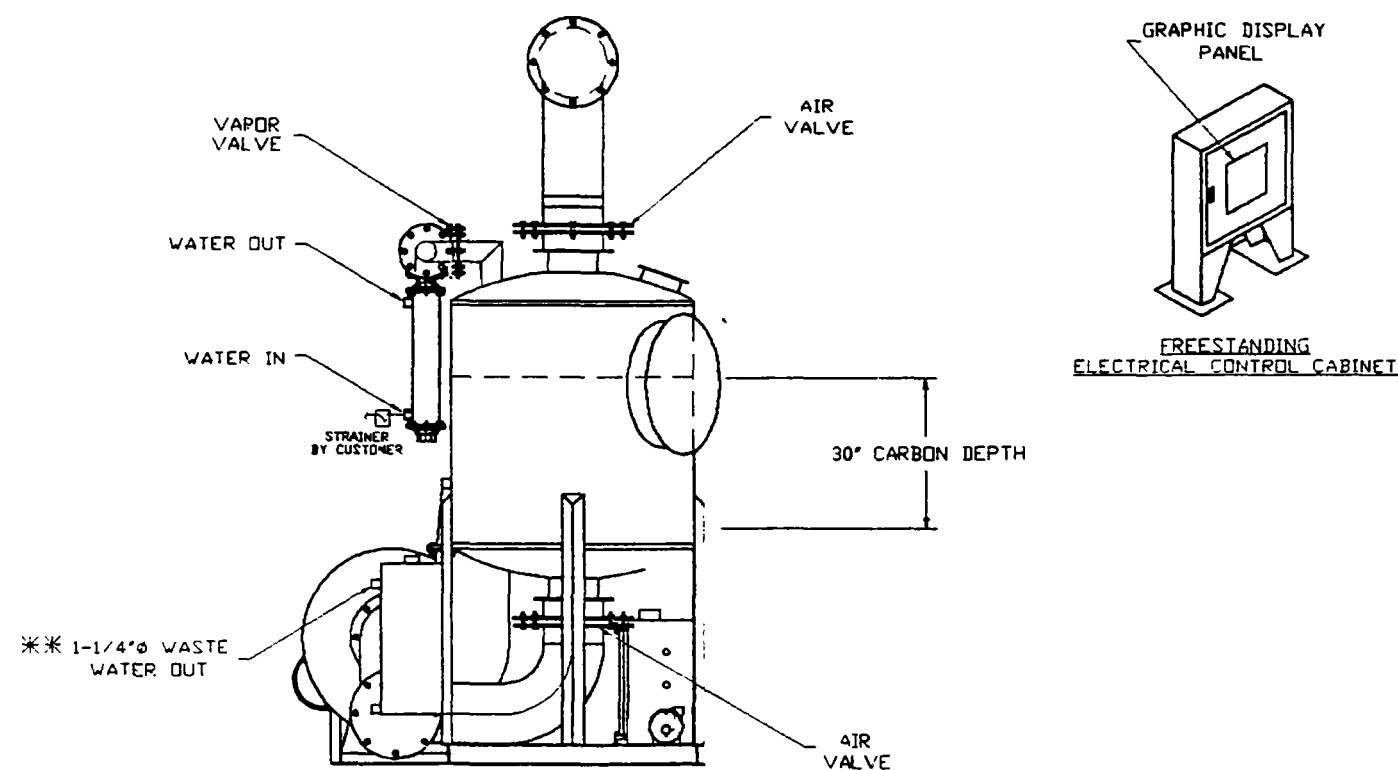
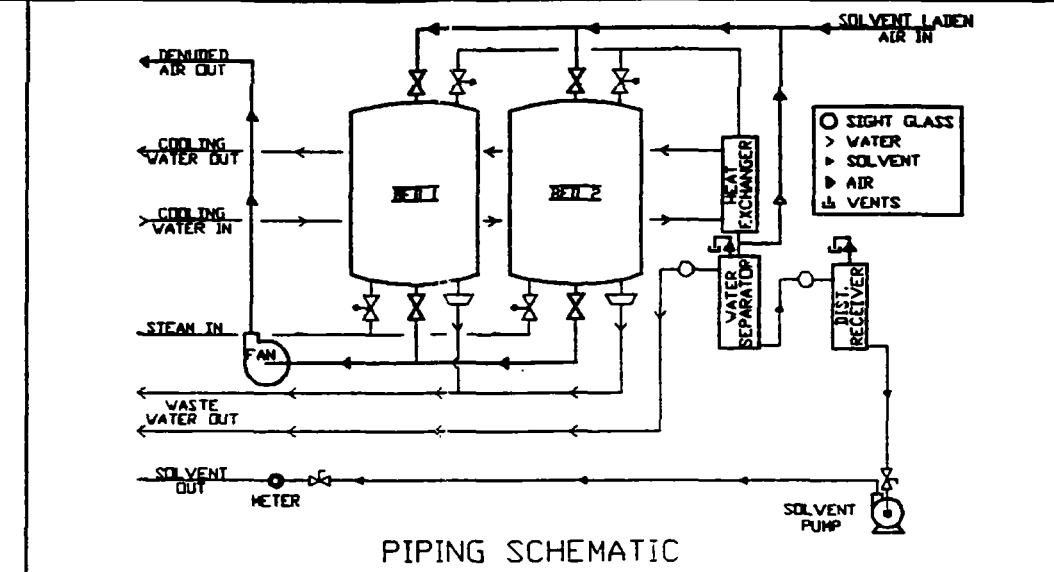
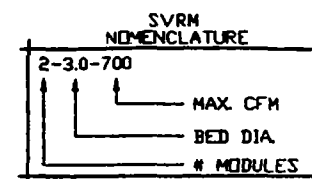
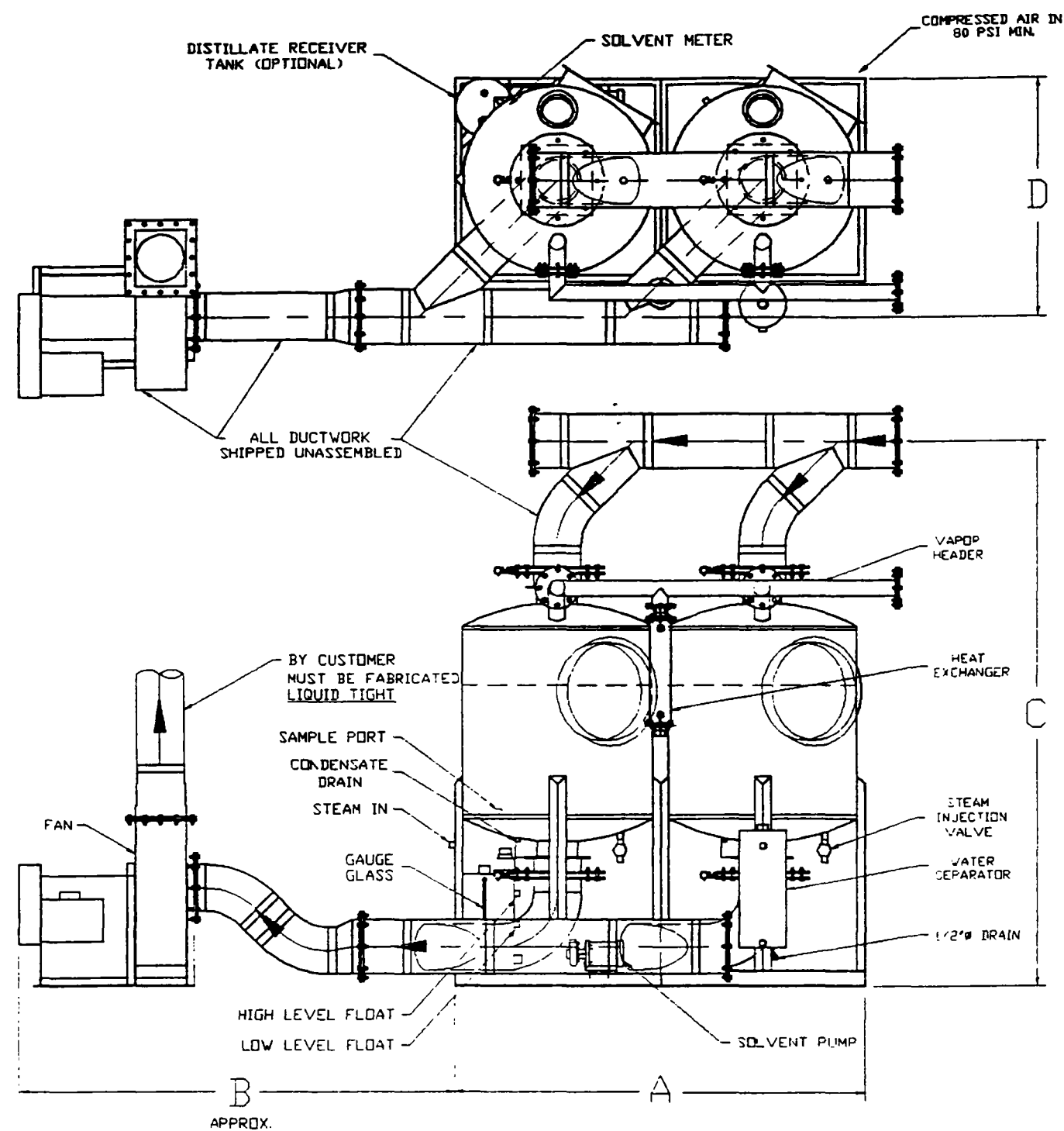
** MUST BE MONITORED BY CUSTOMER FOR ACCEPTABLE PPM LEVELS OF DISSOLVED SOLVENT IN WATER.

NOTE: THIS DRAWING FOR CONCEPT AND PROPOSAL PURPOSES ONLY.

SIZE	A	B	C	D	BLOWER H.P.	MAX CFM	INLET DUCT	OUTLET DUCT	VAPOR HEADER	STEAM INLET	STEAM REQD. (LBS./HR)	WATER CONNECTIONS		WATER REQD. (GPM)		APPROX. SHIPPING WEIGHT	LBS. CARBON PER BED
												TOWER 1" IN 25' RISE	CITY 65" IN 50' RISE	TOWER 1" IN 25' RISE	CITY 65" IN 50' RISE		
3.0	10'-0"	7'-0"	11'-8"	4'-1"	5	1400	12	12	2" CU	3/4	200	1	3/4	15	8	1500	800
5	11'-6"	8'-0"	12'-8"	4'-7"	7.5	1920	12	12	4" SS	1-1/4	300	1-1/4	1	23	12	1800	1000
	13'-0"	9'-0"	12'-8"	5'-1"	10	2400	14	14	4" SS	1-1/4	500	1-1/2	1-1/4	40	20	2250	1400
	16'-6"	10'-0"	12'-8"	6'-4"	15	3800	16	16	4" SS	2	700	2	1-1/4	60	30	3000	2400
6.5	21'-0"	11'-0"	13'-10"	7'-7"	20	5600	18	18	6" SS	2X1-1/2	1200	2X2	2X1-1/2	90	45	3900	3600

DATE	CHANGE	BY	DR	CK	DATE	FOR
			DR. KONTZ	CK. SAH		
			APP.	SCALE	DATE	MODEL

THIS PRINT PROPERTY OF
DETREX CORP.
3 BED SOLVENT VAPOR RECOVERY MODULE
D-3-SVRM-GA



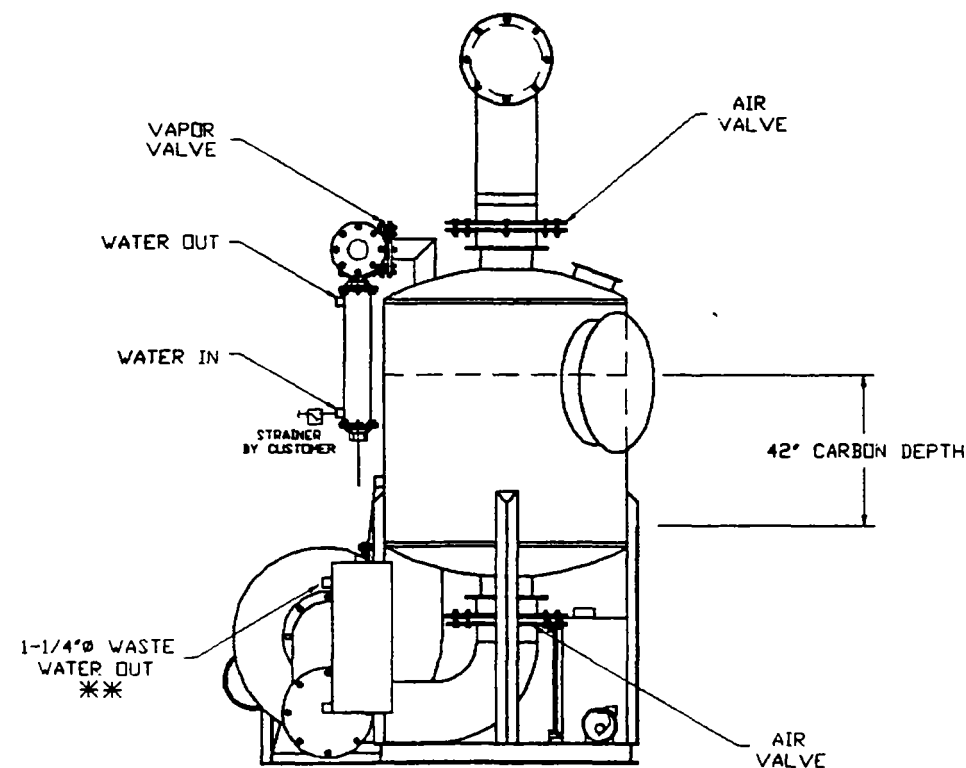
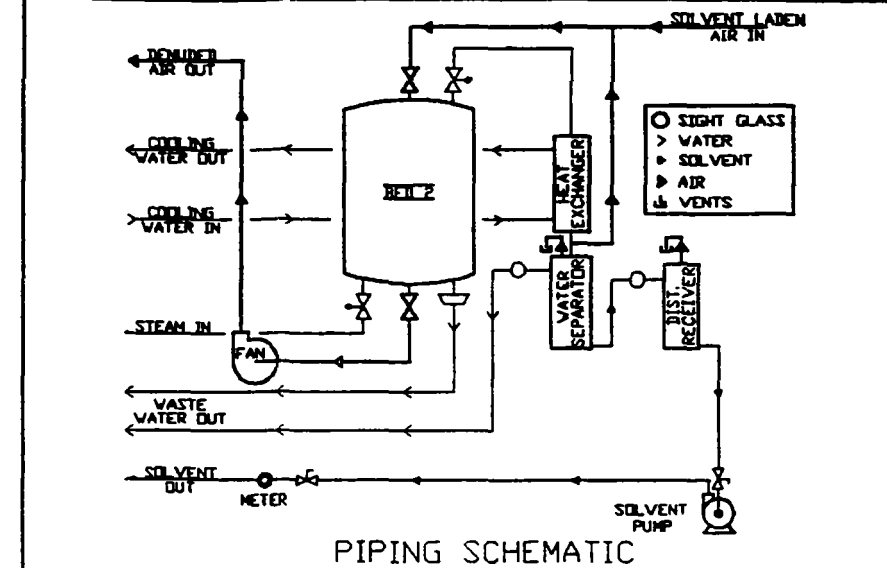
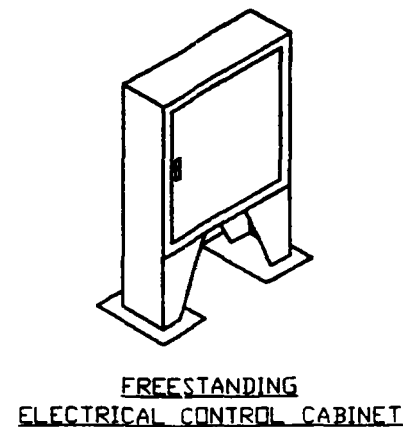
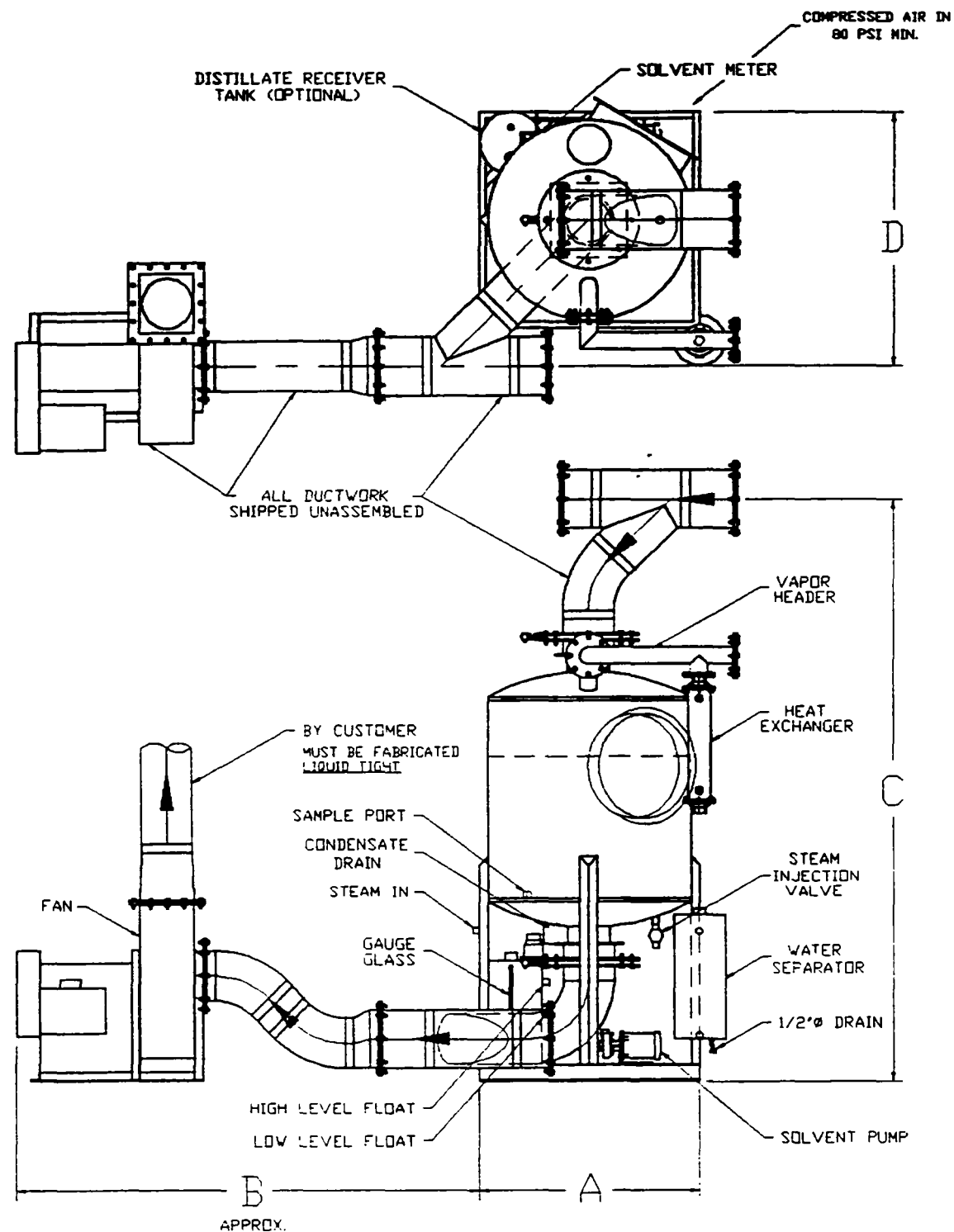
NOTE: CARBON SHIPPED PACKAGED PARTS. MUST BE ADDED IN FIELD

** MUST BE MONITORED BY CUSTOMER FOR ACCEPTABLE PPM LEVELS OF DISSOLVED SOLVENT IN WATER.

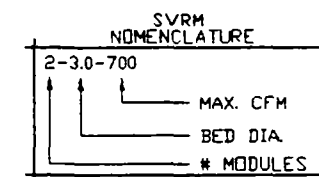
SIZE	A	B	C	D	BLOWER H.P.	MAX CFM	INLET DUCT	OUTLET DUCT	VAPOR HEADER	STEAM INLET	STEAM REQD. (LBS./HR.)	WATER CONNECTIONS		WATER REQD. (GPM)		APPROX. SHIPPING WEIGHT	LBS CARBON PER BED
												TOWER 85" IN 25' RISE	CITY 65" IN 50' RISE	TOWER 85" IN 25' RISE	CITY 65" IN 50' RISE		
3.0	6'-3"	6'-3"	11'-8"	4'-1"	3	700	8	8	2' 00	3/4	200	1	3/4	15	8	1000	300
3.5	7'-3"	6'-3"	12'-8"	4'-7"	3	960	10	10	4' 00	1-1/4	300	1-1/4	1	23	12	1200	1000
4.0	8'-8"	7'-3"	12'-8"	5'-1"	5	1200	12	12	4' 00	1-1/4	500	1-1/2	1-1/4	40	20	1500	1400
5.0	11'-0"	8'-3"	12'-8"	6'-1"	7.5	1900	14	14	4' 00	2	700	2	1-1/4	60	30	2000	2400
6.5	14'-0"	9'-0"	13'-10"	7'-7"	10	2800	16	16	6' 00	2X1-1/2	1200	(2X)2	(2X)1-1/2	90	45	2600	3600

NOTE: THIS DRAWING FOR CONCEPT AND PROPOSAL PURPOSES ONLY.

DATE	CHANGE	BY	DR	MODIFY	THIS PRINT PROPERTY OF		C.A.D. FILE
			CK	SAH	DETREX CORP.		SVRM2PRP
			APP		2 BED SOLVENT VAPOR RECOVERY MODULE		S.O. #
			SCALE	DATE	MODEL		TYPE #
			NONE	1/23/85	FOR		D-2-SVRM-GA



NOTE: CARBON SHIPPED PACKAGED PARTS.
MUST BE ADDED IN FIELD.



** MUST BE MONITORED BY CUSTOMER
FOR ACCEPTABLE PPM LEVELS OF
DISSOLVED SOLVENT IN WATER.

NOTE: THIS DRAWING FOR CONCEPT AND PROPOSAL PURPOSES ONLY.

SIZE	A	B	C	D	BLOWER H.P.	MAX CFM	INLET DUCT	OUTLET DUCT	VAPOR HEADER	STEAM INLET	STEAM RECD. (LBS./HR.)	WATER CONNECTIONS		WATER RECD (GPM)		APPROX. SHIPPING WEIGHT	LBS. CARBON PER BED
												TOWER 85\" IN 25\" RISE	CITY 65\" IN 54\" RISE	TOWER 85\" IN 25\" RISE	CITY 65\" IN 50\" RISE		
3.0	3'-4"	6'-0"	11'-8"	4'-1"	3	700	8	8	2' CU	3/4	200	1	3/4	15	8	500	800
3.5	3'-10"	6'-0"	12'-8"	4'-7"	3	960	10	10	4' SS	1-1/4	300	1-1/4	1	23	12	600	1000
4.0	4'-4"	7'-0"	12'-8"	5'-1"	5	1200	12	12	4' SS	1-1/4	500	1-1/2	1-1/4	40	20	750	1400
4.0	5'-6"	8'-0"	12'-8"	6'-1"	7.5	1900	14	14	4' SS	2	700	2	1-1/4	60	30	1000	2400
6.5	7'-0"	9'-0"	13'-10"	7'-7"	10	2800	16	16	6' SS	(2X)1-1/2	1200	(2X)2	(2X)1-1/2	90	45	1300	3600

DATE	CHANGE	BY	DR	CK	SAH	THIS PRINT PROPERTY OF DETREX CORP.		C.A.D. FILE SVRMIPRP
						APP.	1 BED SOLVENT VAPOR RECOVERY MODULE	S.O. #
						SCALE	DATE MODEL	DWG #
						NONE	1/24/89 FOR	D-1-SVRM-GA

CONFIDENTIAL

DETREX CORPORATION

SALES OFFICE

1052-D Searcy Way
Bowling Green, Kentucky 42101



2) 842-5336

FAX No. (502) 842-5502

March 28, 1989

Gold Shield Solvents
12886 Eaton Avenue
Detroit, MI 48227

Proposal No.: W 0176-89A89

Detrex Representative:
Mr. George Leith

Attention: Mr. Ronald E. Swan
Operations Manager

Gentlemen:

We are pleased to present this addendum to our original Proposal Number W 0176-89, dated March 23, 1989, for a Detrex Solvent Vapor Recovery Module (SVRM). The SVRM proposed herein is described in the accompanying specifications. We trust that it will meet with favorable consideration.

It is understood that the purchaser shall rig and spot this equipment, reassemble any parts removed for shipment, provide and install all interconnecting piping, wiring or ductwork required and make all service connections to and from the unit (unless installation services are provided).

Price: F.O.B. Bowling Green, Kentucky

One Detrex Model SVRM 2-6.5-3300 Solvent
Vapor Recovery System per enclosed
drawing. This unit is factory set
for the reclamation of multiple
solvents and is wired for 480 volts,
3 phase, 60 hertz, NEMA 12 with 110
volt control transformer.....\$59,100.00

Gold Shield Solvents
Proposal No.: W 0176-89A89
Page 2

Special Note: The following items are included in the base price of this Solvent Vapor Recovery System:

- a). Two (2), Size 6.5 activated carbon module vessels.
- b). One (1), standard condenser and water separator assembly.
- c). Stainless steel steam/vapor connecting ducts from module(s) to condenser assembly.
- d). Air handling blower rated at 3300 cfm, driven by a 7 1/2 hp motor.
- e). Inlet and outlet manifold air ducting for single source installation. Includes connection for future module, if required.
- f). NEMA 12 central control panel with liquid tight conduit.
- g). A programmable controller (PC) mounted in electrical console. (Allen-Bradley SLC).
- h). Steam controls consist of:
 - 1). Steam pressure control valve complete with necessary gauges.
 - 2). Air operated ball valve for steam injection.
 - 3). Manifold steam piping with steam strainer, and steam traps on drip legs.
- i). Necessary air controls for air operated wafer valves.
- j). Installation drawings provided listing inlet and outlet air duct sizes, steam inlet pipe size, and cooling water inlet and outlet pipe size.
- k). Start-up service including monitoring of incoming and discharge air. Programmable Controller to be set at this time.

One Item additional for a distillate receiver complete with stainless steel receiver tank to receive, meter and pump reclaimed solvent to your cleaning system. System includes a 1/3 hp pump, meter, high and low level floats to control pump (starter and pilot light mounted in adsorber panel) and sight glass.....\$2,990.00

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Gold Shield Solvents
Proposal No.: W 0176-89A89
Page 3

One Detrex Waste Water Treatment System (WWTS) unit designed to treat effluent water from the SVRM water separator assembly. Data will be provided to aid in proper installation in conjunction with the SVRM with carbon filter.....\$5,240.00

Delivery: The estimated shipping date for this equipment is approximately 10 to 12 weeks from receipt of your order.

Terms: Standard Detrex terms (30 days net or as determined by our credit committee) and conditions of sale enclosed will apply to this equipment.

The services of an experienced Detrex representative are offered with this proposal to provide installation assistance. He will also supervise start-up and training of your operating personnel on a no-charge basis, exclusive of foreign countries and U.S. Territories.

Arrangements can be made to provide these services in the above listed locations for a nominal fee.

This proposal expresses our desire to assist you with your cleaning operation. Your order will give us this opportunity.

Very truly yours,

Detrex Corporation


Steve Hampton
Product Manager

mab

Please place your order with:
Ms. Sharon Pfeiffer
Supervisor, Order Department
Post Office Box 569
Bowling Green, Kentucky 42102-0569
Telephone Number: (502) 782-1511
Facsimile Number: (502) 781-3425

Enc.: IE 6006.3 IM 18.01
SVRM System Description

Drawing No.: D-SVRM-2-GA

CONFIDENTIAL

DETREX CORPORATION

EQUIPMENT MANUFACTURING DIVISION

325 Emmett Avenue

Bowling Green, KY 42101



(502) 782-2411

FAX (502) 782-6194

February 23, 1990

Detrex Corporation
Solvents Division
12886 Eaton Avenue
Detroit, MI 48227

Attention: Mr. Ron Swann
Branch Manager

FSQ #SVRM-22190

Dear Sir:

As per your request, Detrex is pleased to present the following proposal for field installation of a Solvent Vapor Recovery Module. Detrex's installation consists of:

- A. Provide and install electrical service from customer supplied overcurrent protection disconnect. Installed and wired to National Electric Code. Electrical Conduit - EMT.
- B. Provide and install water lines (supply and return) to unit from customer supplied shut-off valves. All lines to be sweat copper - galvanized bronze valves.
- C. Provide and install steam line to unit from customer supplied shut-off valve on supply. All lines to be black steel - insulated - and installed per local codes. Drip leg, valves, traps, and pressure gauges are included.
- D. Provide and install air line to unit from customer supplied shut-off valve. Air lines to be black steel. Detrex to install shut-off valve and dryer assembly at unit.
- E. Provide and install solvent return line from system to holding tank. Solvent line will be stainless steel
- F. Provide and install waste water discharge line to customer treatment system or holding tank. Waste water line to be stainless steel.
- G. Provide and install interconnecting duct work between SVRM System and equipment. Duct material to be stainless steel welded to ensure liquid-tite. All necessary dampers and

DETREX CORPORATION

Page -2-

down legs and supports included. Detrex will supply discharge duct to connect to customer's atmosphere exhaust. Included is roof stack, weather cap, and roof penetration. Duct will be designed per reference drawing provided by customer.

- H. Reassembly of manifold ducting removed for shipment.
- I. Detrex to modify existing SVRM to prepare unit for special application as per our meeting held at Bowling Green on February 20, 1990.

Complete installation including materials, labor, and travel expenses.....\$30,779.00

WARRANTY: Detrex warrants all parts for (1) one year with 90 day warranty on workmanship.

TERMS AND CONDITIONS

All work to be performed during normal work hours. Evening or weekend hours available at Detrex discretion. Work will be performed by union labor. Two weeks advance notice required for schedule.

Customer is responsible for all else including but not limited to the following:

- A. Any and all permits to install and/or operate equipment related to this proposal.
- B. Clear working space adjacent to units for contractor's equipment and supplies.
- C. Security for above contractor's equipment and supplies.
- D. Lift devices for overhead work if necessary.
- E. Spotting of units.

Detrex appreciates the opportunity to provide you with this proposal. If you have any questions, please contact me.

Thank you,

DETREX CORPORATION


Joe McChesney
Field Service Manager



L. Suller
DETREX CHEMICAL INDUSTRIES, INC.

325 EMMETT AVENUE, P. O. BOX 569
BOWLING GREEN, KENTUCKY 42101
PHONE: (502) 782-2411 TWX: 810-531-3655

INVOICE NO. **20-**

SALES ORDER NO. **72656**

SOLD TO
Gold Shield Solvents
12886 Eaton Avenue
Detroit, MI 48227

CONFIDENTIAL

SHIP TO
SAME

No.

No.

MANAGER	SALESMAN Leith	NO. 0452	TYPE	REF	WAREHOUSE	OTHER SALESMAN Swan	NO.
ORDER DATE 1-23-90	SCHEDULED SHIP DATE 2-28-90	S. O. DATE 11-23-89	TERMS 30	DAYS NET	SHIPPED FROM (FOB SHIPPING POINT) Bowling Green, KY		
CUSTOMER ORDER NO. S 103189		SHIPPED VIA			PPD XX	PPD. & CHG.	DATE SHIPPED MACH. CLA 2A

ITEM	DESCRIPTION	TAX	ACCOUNT NUMBER	QUAN. SHIP	AMOUNT
E	NO. 2 REVISION ORDER DATED 2-22-90				
	Issued to add the following items:				
	Remake all ductwork to stainless steel.			1	\$9,374.00
	Add monitoring.			1	\$6,500.00
	New electrical panel.			1	\$1,775.00
	PREVIOUS TOTAL				\$62,090.00
	NEW TOTAL				\$79,739.00
	(SVRM-2-6.5-3300)				

REMARKS:
W. NILSSON TO HANDLE
Ron Swan - Solvent Division



GOLD SHIELD SOLVENTS
Division of Detrex Chemical Industries, Inc.

12886 EATON AVE., DETROIT, MICH. 48227 • Area Code 313 Phone 491-4550

CONFIDENTIAL

OUR PURCHASE ORDER NUMBER MUST BE INCLUDED IN EACH PARCEL NUMBER MUST ALSO APPEAR ON EACH PARCEL PACKING SLIP ON CARLOAD SHIPMENT MUST BE PLACED IN AN ENVELOPE AND FASTENED INSIDE OF CAR NEAR DOOR

Detrex Corporation
325 Emmett Avenue
Bowling Green, Ky 42101

**PURCHASE
ORDER**
SHIP TO

GS

9178

Attn: Joe Mc Chesney

PLEASE ENTER OUR ORDER FOR THE FOLLOWING SUBJECT TO ALL THE CONDITIONS HEREIN CONTAINED ON THE REVERSE SIDE.

Q. DATE	DELIVERY REQ.	SHIP VIA	F.O.B.	TERMS
ITEM	QUANTITY	DESCRIPTION	PRICE	
1	1	Modifications necessary to satisfy Wayne County Air Pollution Control Board requirements and to operate unit as a "Beta Site" as follows:		
		a) Return/reqork existing carbon to improve absorption.		
		b) Valve monitoring package, includes modification of valves		
		c) Air monitoring package	\$6,500	
		d) Modify 480V Electric Panel to allow for operation on 230V 3 phase power in plant.	\$1,775	
		e) Exchange existing plenums and heat exchangers for stainless steel units.	\$9,374	
		f) Stabilizer injection package (Metering pump to be furnished by others).		
Total			\$17,649	

ITEM	DATE	REC. NO.	QUAN.	BAL.	CHARGES OR REMARKS

GOLD SHIELD SOLVENTS

BY 



GOLD SHIELD SOLVENTS
Division of Detrex Chemical Industries, Inc.

12886 EATON AVE., DETROIT, MICH. 48227 • Area Code 313 Phone 481-4550

CONFIDENTIAL

PACKING SLIP LISTING CONTENTS AND OUR PURCHASE ORDER NUMBER MUST BE INCLUDED IN EACH PARCEL. NUMBER MUST ALSO APPEAR ON EACH PARCEL. PACKING SLIP ON CARLOAD SHIPMENT MUST BE PLACED IN AN ENVELOPE AND FASTENED INSIDE OF CAR NEAR DOOR.

Detrex Corporation
325 Emmett Ave
Bowling Green, Ky 42101

**PURCHASE
ORDER**
SHIP TO

GS 9177

Attn: Joe Mc Chesney

PLEASE ENTER OUR ORDER FOR THE FOLLOWING SUBJECT TO ALL THE CONDITIONS HEREIN CONTAINED ON THE REVERSE SIDE.

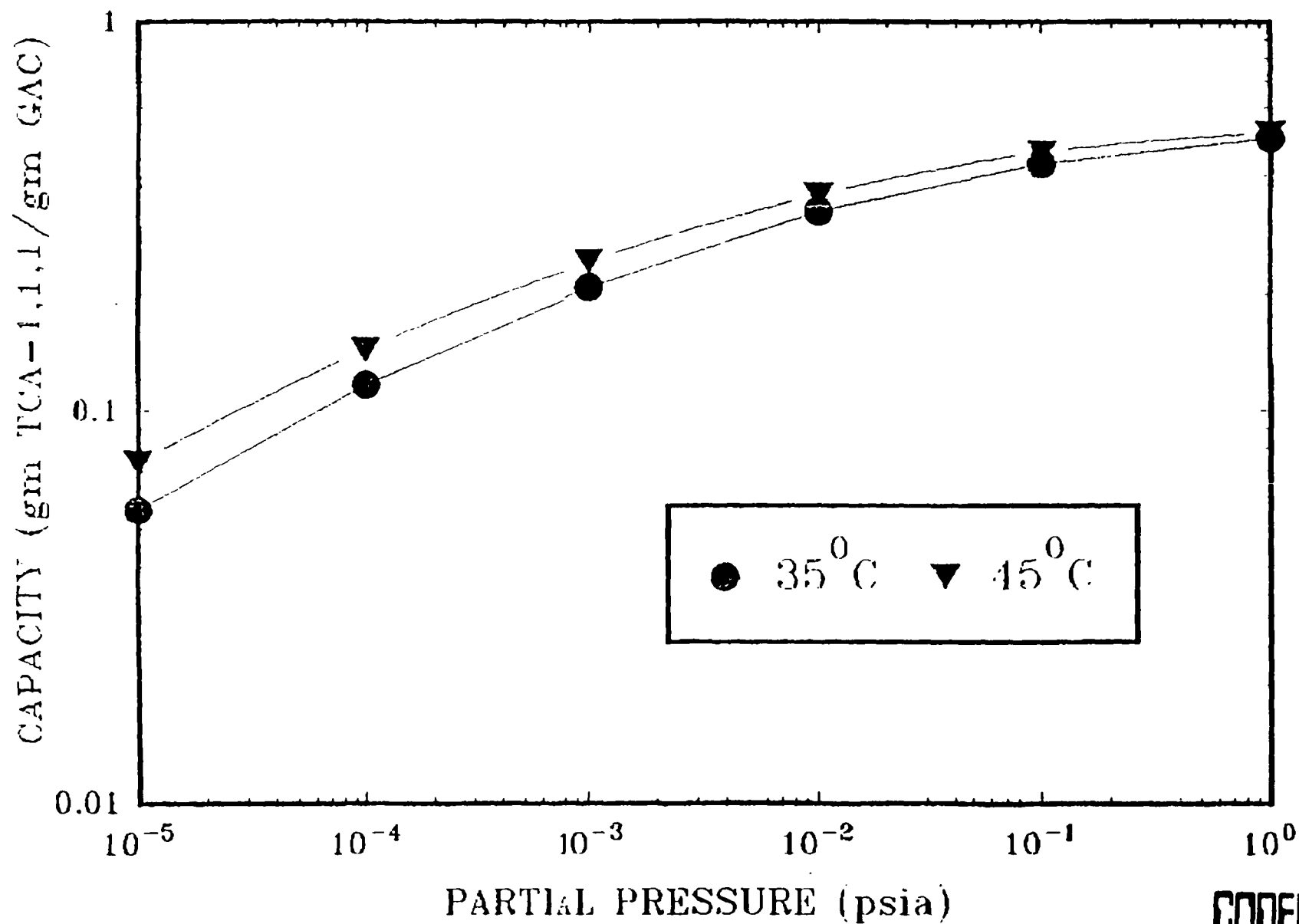
Q. DATE	DELIVERY REQ.	SHIP VIA	F.O.B.	TERMS
ITEM	QUANTITY	DESCRIPTION		PRICE
1	1	Installation of Detrex SVRM Model 2-6.5-3300 which includes the following:		
		a) Make all electrical connections (100 Amp disconnect to be installed near unit by others).		
		b) Installation of all duct work including plenums		
		c) Installation of Air Valves		
		d) Installation of Heat Exchangers		
		e) Modifications necessary to properly install unit in facility		
		f) All Travel Expenses		
		g) Mechanical work to connect steam, cooling water, and pump discharge's as necessary.		
		h) Stainless Steel ductwork and plenums		
		Total		\$30,779.

ITEM	DATE	REC. NO.	QUAN.	BAL.	CHARGES OR REMARKS

GOLD SHIELD SOLVENTS

BY

TRICHLOROETHANE-1,1,1 ADSORPTION ISOTHERM

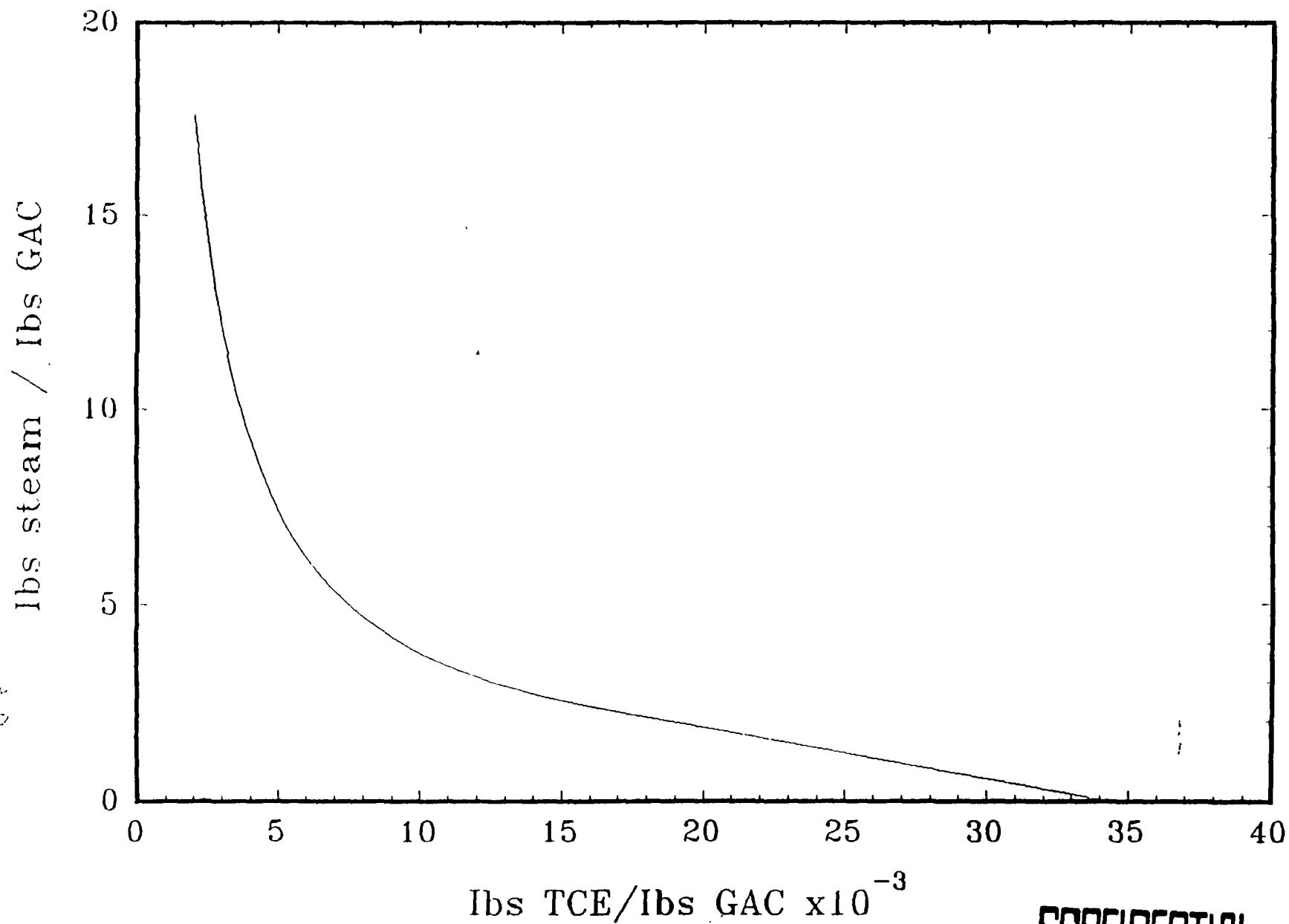


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RECOVERY OF TCE FROM CARBON WITH STEAM

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Standard Test Method for pH of Activated Carbon¹

This standard is issued under the fixed designation D 3838; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers determination of the pH of a water extract of activated carbon.

1.2 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 1193 Specification for Reagent Water²

D 1293 Test Methods for pH of Water²

D 2867 Test Method for Moisture in Activated Carbon³

E 300 Practice for Sampling Industrial Chemicals⁴

3. Summary of Test Method

3.1 An activated carbon sample is boiled in reagent water using a reflux condenser to recycle water vapor. The particles of carbon are filtered out, the filtrate cooled to 50°C and the pH of the filtrate determined by electrometric measurement.

4. Significance and Use

4.1 When a fluid containing an adsorbate is passed through a bed of activated carbon, chemical reactions may take place between the activated carbon, its other noncarbonaceous constituents, and the adsorbate containing fluid. The pH of the carbon may be a significant parameter of such a reaction and therefore may be an important characteristic of the carbon.

5. Apparatus and Materials

5.1 *Analytical Balance*, capacity 100 g, precision ± 0.01 g.

5.2 *Hot Plate*.

5.3 *Glassware for Boiler-Reflux Condenser Apparatus* (Fig. 1)—Items shown are for guidance only, providing a convenient set of equipment available off-the-shelf from many laboratory supply houses. The “all-glass” elements, with standard-taper and ball joints, provide freedom from contamination and maintenance. A check valve in the position shown

is essential to relieve pressure buildup while minimizing loss of vapor.

5.4 *Thermometer*, glass, approximately 0 to 120°C, long enough to be read at 100°C when inserted to bottom of Erlenmeyer flask in Fig. 1.

5.5 *Thermometer*, glass, approximately 20 to 55°C.

5.6 *Graduated Cylinder*, 100-mL.

5.7 *Beaker*, 200-mL.

5.8 *Filter Funnel*.

5.9 *Filter Paper*, qualitative, medium flow rate, 12.5 cm or larger in diameter.

5.10 *Timer*.

5.11 *pH Meter*, in accordance with Test Methods D 1293, Type II (automatic thermal compensation preferred).

5.12 *Reagent Water*, in accordance with Specification D 1193, Type II.

6. Safety Precautions

6.1 The test method involves transfer of boiling water between containers; appropriate tongs or gloves should be used. In addition, the use of an electric hot plate and pH meter (if line-powered) poses a shock hazard. This equipment must be grounded and insulated in accordance with UL standards and electrical codes.

7. Sampling

7.1 Guidance in sampling activated carbon is given in Practice E 300.

8. Calibration and Standardization

8.1 Use the procedure of Test Methods D 1293 to standardize the pH meter.

9. Procedure

9.1 Determine the moisture content of the carbon in accordance with Test Method D 2867. Calculate the weight of moist carbon equivalent to 10 g on a dry basis.

9.2 Weigh out a sample of carbon equivalent to 10.00 ± 0.01 g on a dry basis. Remove boiler flask from apparatus and add carbon sample.

9.3 Bring approximately 110 mL of reagent water to a gentle boil. Measure 100.0 ± 0.1 mL in graduated cylinder while water is hot. Immediately add this water to the carbon in the flask. Reconnect joints to flask seated on hot plate.

9.4 Bring water in flask to a boil, using thermometer reading to assure that no false boiling, due to gases trapped in carbon, occurs.

9.5 Boil gently for 900 ± 10 s.

9.6 Remove the flask from the hot plate and filter its contents immediately through the filter paper premoistened with the distilled water used for the test. Catch the filtrate in a 500-mL vacuum filter flask, being careful to prevent carbon

¹ This test method is under the jurisdiction of ASTM Committee D-28 on Activated Carbon and is the direct responsibility of Subcommittee D28.04 on Gas Phase Evaluation Tests.

Current edition approved Jan. 3, 1980. Published March 1980.

² Annual Book of ASTM Standards, Vol. 11.01.


³ Annual Book of ASTM Standards, Vol. 15.01.

⁴ Annual Book of ASTM Standards, Vol. 15.05.

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DETREX INTER-OFFICE CORRESPONDENCE

TO: I H. Shamiyeh

FROM: 
R.E. Swan

CC: C. U. Guy, M. J. Tepatti, File

DATE: 3-8-89

SUBJECT: Emissions Calculations

Attached are my calculations regarding solvent emissions from storage tanks and process equipment. The data used to arrive at the emission rates and concentrations were actual operational data accumulated from February 1, 1988 through January 31, 1989. (The most current data available).

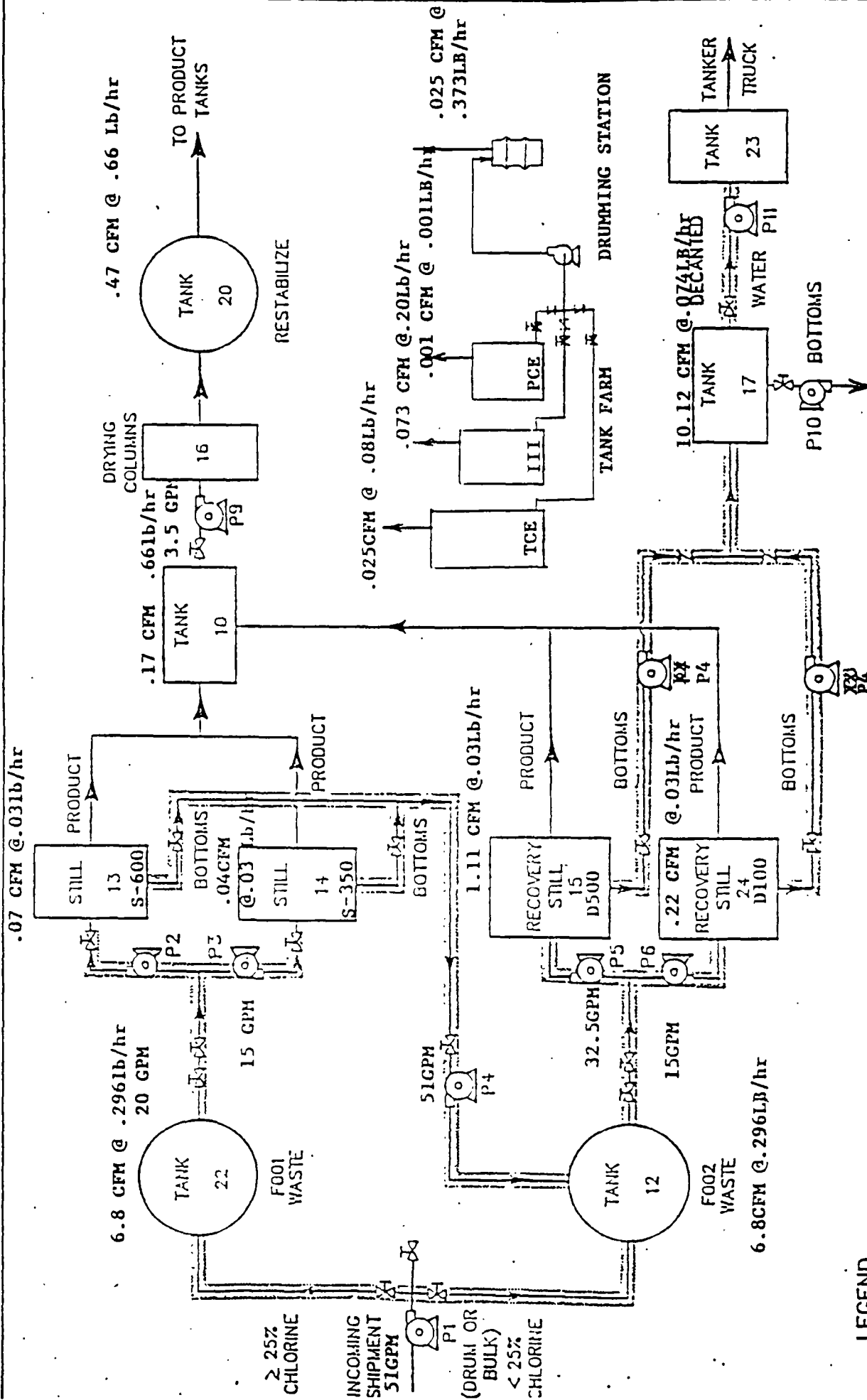
Conservative assumptions, which would give higher concentrations and/or flow rates, were used as follows:

- 1). Average ambient temperature, outside = 68°F
- 2). Average ambient temperature, inside = 70°F
- 3). Partial pressure of contaminants in waste (Oil) = 0 mm Hg.
- 4). Still bottoms from Detrex Stills contain approximately 20% solvent.
- 5). Average operating year = 2,900 hours.
- 6). Tank farm is operated 8,760 hours/year.
- 7). Average temperature of F002 tank is 100° F
- 8). Equipment which is operated in parallel have identical or proportional emissions.
- 9). Process tanks and equipment are emptied and refilled after each batch is processed.
- 10). Only 1/3 of reclaimed solvent is stored in bulk.
- 11). "Breathing" emissions can be calculated by the use of the EPA's equation for calculating the loss of material from fixed roof storage tanks.

Please note that the average emission rates and concentrations are based on total through put through the facility over the operating year (2900 hrs). Maximum flow rates and concentrations are based on maximum operating conditions of equipment (pumps, etc.) Freon is used as the worse case due to its higher vapor pressure, even though it represents only 10.5% of our reclamation activities.

If you have any questions, please feel free to contact me.

RS/bh



LEGEND

HAZARDOUS WASTE STREAM


Drum

MAXIMUM FLOW RATES AND CONCENTRATIONS (Based on Freon Waste)

ATTACHMENT D



HAZARDOUS WASTE STREAM



PUMP

*NOTE: Only One Tank is Filled (and emits vapors at this rate) at a Time/held Solvents Notrit

RAILCAR OR TANK TRUCK

PROCESS FLOW DIAGRAM
Detrex Corporation
Arlingfield Solvents Detroit

Rung: 001 CONTROLS SEQ. DEPENDING ON CONDITION OF NEXT RUNG

701 T 901
 JNC (SGO)
 GRP 00

Rung: 002 INHIBITS SEQ. IN ADSORB; ALLOW CYCLE COMPLETE IN DESORB OR C.D.

SS6 SOL2 SOL4 LT24 LT25
 001 012 014 015 016 701
 JNC JNC JNC JNC JNC
 TIMER
 002
 JNC

Rung: 003 DISABLES BED #2 ADSORB CYCLE IF SVRM IS TURNED OFF

SS6 SOL3
 701 001 013
 J L JNC (U)

Rung: 004 DISABLES BED #1 ADSORB CYCLE IF SVRM IS TURNED OFF

SS6 SOL1
 701 001 011
 J L JNC (U)

Rung: 005 CONTROLS BLOWER WHEN BEDS ARE IN ADSORB

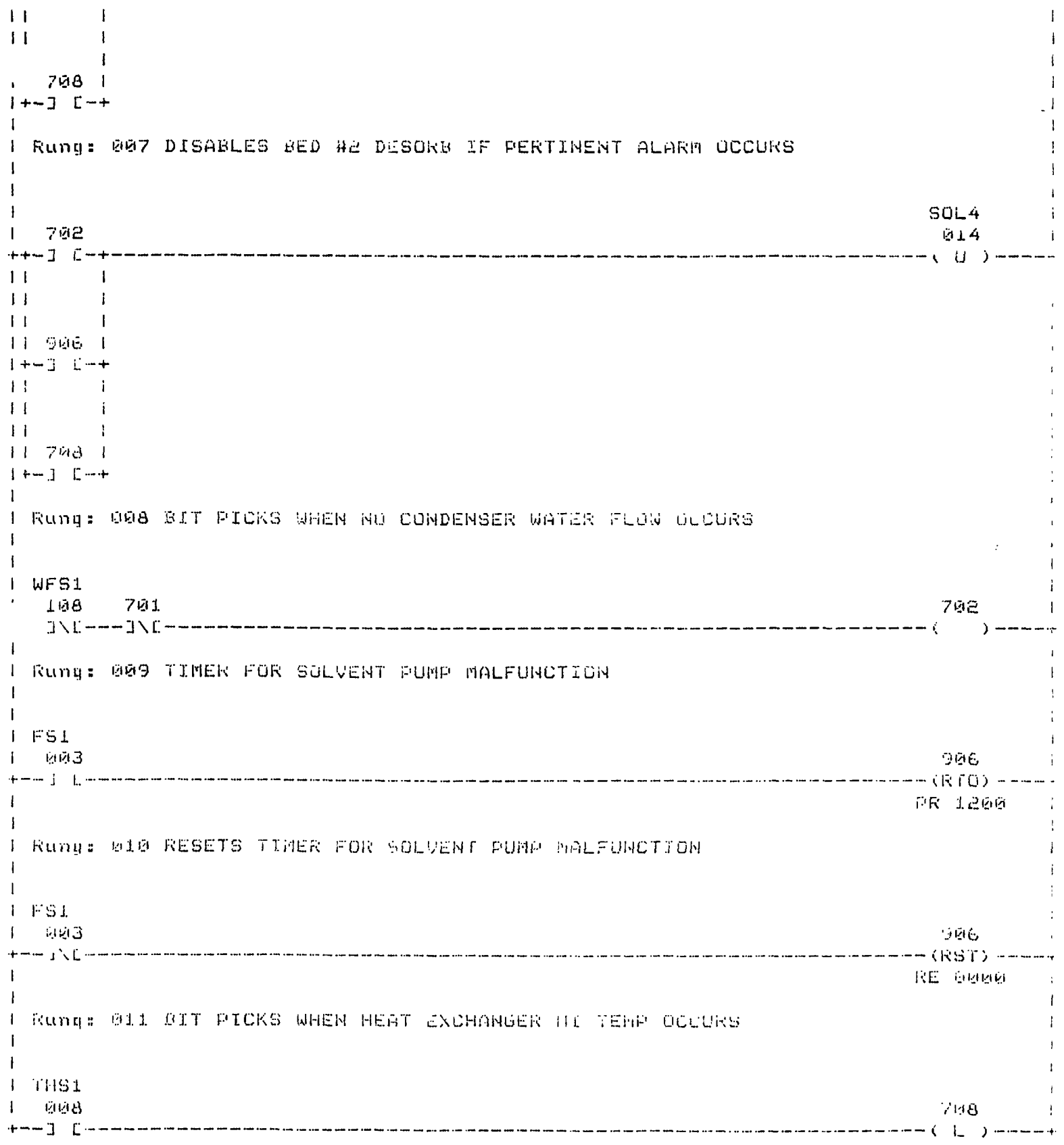
SOL1 M1
 011 111
 J L
 SOL3
 013
 J L

Rung: 006 DISABLES BED #1 DESORB IF PERTINENT ALARM OCCURS

SOL2
 702 012
 J L (U)

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006
 J L



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```

|
| Rung: 017 BIT PICKS WHEN BED #1 AIR INLET VALVE #1 NOT CLOSED
|
|          LS1B
| SOL2     CLOSE
| 012     917     201
|-----] [----] [----] [NC-----] ( )-----+
|
| Rung: 018 BIT PICKS WHEN BED #1 AIR INLET VALVE #2 NOT CLOSED
|
|          LS9B
| SOL2     CLOSE
| 012     917     004
|-----] [----] [----] [NC-----] ( )-----+
|
| Rung: 019 RESETS TIMER WHEN CORRECT VALVE POSITION IS REACHED
|
|          LS2A  LS10A
| SOL1  OPEN  OPEN
| 011     302     105
|-----] [----] [----] [NC-----] (RST)-----+
|
|          LS2B  LS10B
| SOL2  CLOSE CLOSE
| 012     202     005
|-----] [----] [----] [NC-----] (RST)-----+
|
| Rung: 020 TIMER TO IGNORE BED #1 AIR OUTLET VALVE #1 OR #2 ROTATION
|
|          LS2A
| SOL1  OPEN
| 011     302
|-----] [----] [NC-----] (RTO)-----+
|
|          LS10A
| SOL1  OPEN
| 011     105
|-----] [----] [NC-----] (RTO)-----+
|
|          LS2B
| SOL2  CLOSE
| 012     202
|-----] [----] [NC-----] (RTO)-----+
|
|          LS10B
| SOL2  CLOSE
| 012     005
|-----] [----] [NC-----] (RTO)-----+
|
| Rung: 021 BIT PICKS WHEN BED #1 AIR OUTLET VALVE #1 NOT OPEN
|
|          LS2A
| SOL1  OPEN
| 011     910     302
|-----] [----] [----] [NC-----] ( )-----+

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Rung: 034 TIMER TO IGNORE BED #2 AIR INLET VALVE #1 OR #2 ROTATION

LS5A
SOL3 OPEN
013 305

921

----- (RTO) -----

PR 0150

LS11A
SOL3 OPEN
013 106

LS5B
SOL4 CLOSE
014 205

LS11B
SOL4 CLOSE
014 006

Rung: 035 BIT PICKS WHEN BED #2 AIR INLET VALVE #1 NOT OPEN

LS5A
SOL3 OPEN
013 921 305

720

----- () -----

Rung: 036 BIT PICKS WHEN BED #2 AIR INLET VALVE #2 NOT OPEN

LS11A
SOL3 OPEN
013 921 106

732

----- () -----

Rung: 037 BIT PICKS WHEN BED #2 AIR INLET VALVE #1 NOT CLOSED

LS5B
SOL4 CLOSE
014 921 205

721

----- () -----

Rung: 038 BIT PICKS WHEN BED #2 AIR INLET VALVE #2 NOT CLOSED

LS11B
SOL4 CLOSE
014 921 006

733

----- () -----

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Rung: 039 RESETS TIMER WHEN CORRECT VALVE POSITION IS REACHED

	LS6A	LS12A	
SOL3	OPEN	OPEN	
013	306	107	922
+---] [---] [---] [---]-----			(RST)
			RE 0000
	LS6B	LS12B	
SOL4	CLOSE	CLOSE	
014	206	007	
+---] [---] [---] [---]-----			

Rung: 040 TIMER TO IGNORE BED #2 AIR OUTLET VALVE #1 OR #2 ROTATION

	LS6A		
SOL3	OPEN		
013	306		922
+---] [---] [---] [---]-----			(RTO)
			PR 0150
	LS12A		
SOL3	OPEN		
013	107		
+---] [---] [---] [---]-----			
	LS6B		
SOL4	CLOSE		
014	206		
+---] [---] [---] [---]-----			
	LS12B		
SOL4	CLOSE		
014	007		
+---] [---] [---] [---]-----			

Rung: 041 BIT PICKS WHEN BED #2 AIR OUTLET VALVE #1 NOT OPEN

	LS6A		
SOL3	OPEN		
013	922	306	722
+---] [---] [---] [---]-----			()

Rung: 042 BIT PICKS WHEN BED #2 AIR OUTLET VALVE #2 NOT OPEN

	LS12A		
SOL3	OPEN		
013	922	107	734
+---] [---] [---] [---]-----			()

Rung: 043 BIT PICKS WHEN BED #2 AIR OUTLET VALVE #1 NOT CLOSED

	LS6B		
SOL4	CLOSE		
014	922	206	723
+---] [---] [---] [---]-----			()

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Rung: 044 BIT PICKS WHEN BED #2 AIR OUTLET VALVE #2 NOT CLOSED

```

      LS12B
SOL4  CLOSE
  014  922  007
-----] [-----] [-----] [-----] ( ) -----+

```

Rung: 045 RESETS TIMER WHEN CORRECT VALVE POSITION IS REACHED

```

      LS7B
SOL3  CLOSE
  013  207
-----] [-----] [-----] (RST) -----+
      RE 0000
      LS7A
SOL4  OPEN
  014  307
-----] [-----] [-----] [-----]

```

Rung: 046 TIMER TO IGNORE BED #2 STEAM VALVE ROTATION

```

      LS7B
SOL3  CLOSE
  013  207
-----] [-----] [-----] (RTO) -----+
      PR 0150
      LS7A
L4    OPEN
  014  307
-----] [-----] [-----] [-----]

```

Rung: 047 BIT PICKS WHEN BED #2 STEAM VALVE NOT CLOSED

```

SOL3
  013  923
-----] [-----] [-----] ( ) -----+

```

Rung: 048 BIT PICKS WHEN BED #2 STEAM VALVE NOT OPEN

```

SOL4
  014  923
-----] [-----] [-----] ( ) -----+

```

Rung: 049 RESETS TIMER WHEN CORRECT VALVE POSITION IS REACHED

```

      LS8B
SOL3  CLOSE
  013  200
-----] [-----] [-----] (RST) -----+
      RE 0000
      LS8A
L4    OPEN
  014  308
-----] [-----] [-----] [-----]

```

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CONTROLS SEQ. FOR DISPLAYING OF ALARM MESSAGES ON DATALINER

E 910
(SQ0)
GRP 04

910
(RST)
E 0007

RESETS SEQ. TO DISPLAY "SOLVENT PUMP MALFUNCTION"

910
(RST)
RE 0001

910
(RST)
E 0008

RESETS SEQ. TO DISPLAY "BED 1 AIR IN VALVE 1 NOT OPEN"

910
(RST)
RE 0002

910
(RST)
E 0009

RESETS SEQ. TO DISPLAY "BED 1 AIR IN VALVE 1 NOT CLOSED"

910
(RST)
RE 0003

910
(RST)
E 0010

RESETS SEQ. TO DISPLAY "BED 1 AIR IN VALVE 2 NOT OPEN"

910
(RST)
RE 0004

910
(RST)
E 0011

RESETS SEQ. TO DISPLAY "BED 1 AIR IN VALVE 2 NOT CLOSED"

910
(RST)
RE 0005

910
(RST)
E 0012

RESETS SEQ. TO DISPLAY "BED 1 AIR OUT VALVE 1 NOT OPEN"

910
(RST)
RE 0006

910
(RST)
E 0013

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Rung: 069 RESETS SEQ. TO DISPLAY "BED 2 AIR IN VALVE 1 NOT OPEN"

720 910
-----] [----- (RST)-----
RE 0014

Rung: 070 RESETS SEQ. TO DISPLAY "BED 2 AIR IN VALVE 1 NOT CLOSED"

721 910
-----] [----- (RST)-----
RE 0015

Rung: 071 RESETS SEQ. TO DISPLAY "BED 2 AIR IN VALVE 2 NOT OPEN"

732 910
-----] [----- (RST)-----
RE 0016

Rung: 072 RESETS SEQ. TO DISPLAY "BED 2 AIR IN VALVE 2 NOT CLOSED"

733 910
-----] [----- (RST)-----
RE 0017

Rung: 073 RESETS SEQ. TO DISPLAY "BED 2 AIR OUT VALVE 1 NOT OPEN"

722 910
-----] [----- (RST)-----
RE 0018

Rung: 074 RESETS SEQ. TO DISPLAY "BED 2 AIR OUT VALVE 1 NOT CLOSED"

723 910
-----] [----- (RST)-----
RE 0019

Rung: 075 RESETS SEQ. TO DISPLAY "BED 2 AIR OUT VALVE 2 NOT OPEN"

734 910
-----] [----- (RST)-----
RE 0020

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Rung: 076 RESETS SEQ. TO DISPLAY "BED 2 AIR OUT VALVE 2 NOT CLOSED"

735 910
] [----- (RST) -----
RE 0021

Rung: 077 RESETS SEQ. TO DISPLAY "BED 2 STEAM NOT OPEN"

725 910
] [----- (RST) -----
RE 0022

Rung: 078 RESETS SEQ. TO DISPLAY "BED 2 STEAM NOT CLOSED"

724 910
] [----- (RST) -----
RE 0023

Rung: 079 RESETS SEQ. TO DISPLAY "BED 2 VAPOR NOT OPEN"

727 910
] [----- (RST) -----
RE 0024

Rung: 080 RESETS SEQ. TO DISPLAY "BED 2 VAPOR NOT CLOSED"

726 910
] [----- (RST) -----
RE 0025

Rung: 081 RESETS SEQ. TO DISPLAY "NO WATER FLOW"

702 910
] [----- (RST) -----
RE 0026

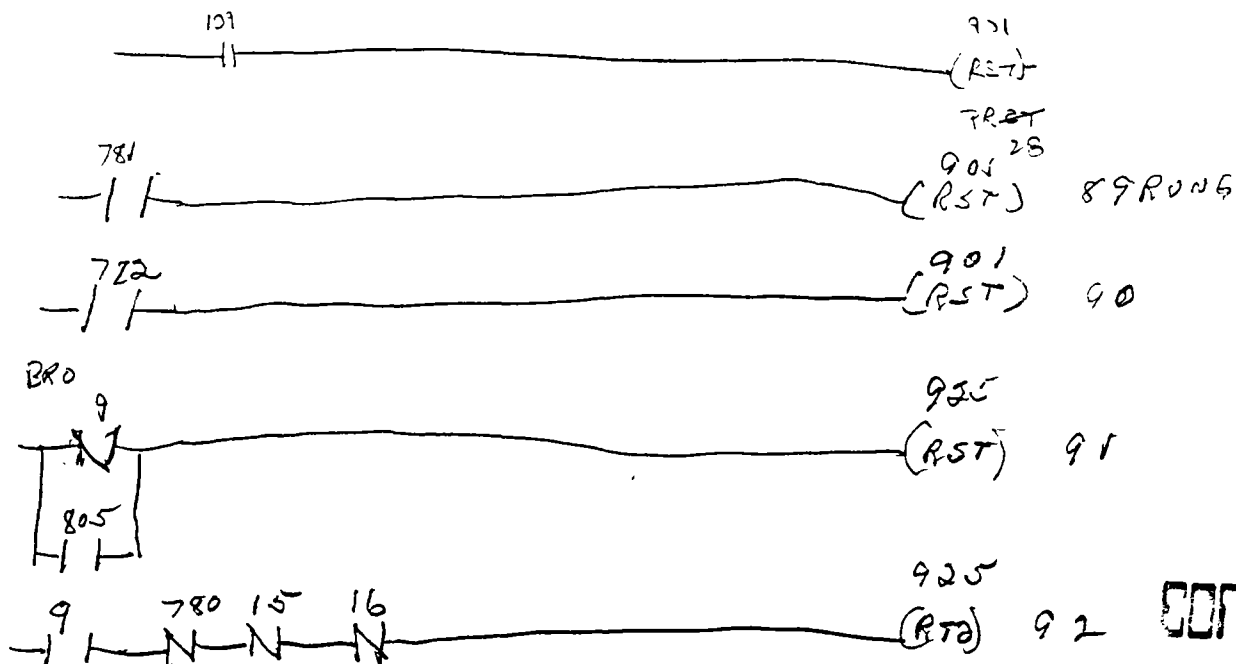
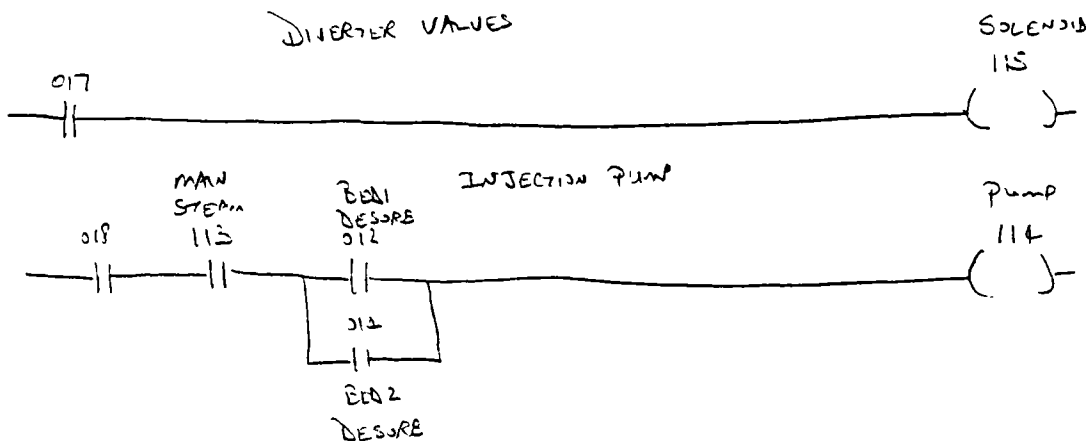
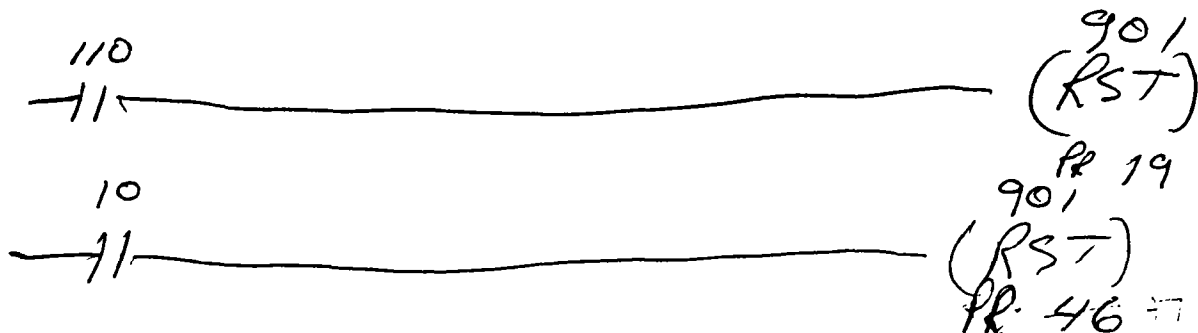
Rung: 082 RESETS SEQ. TO DISPLAY "EXCHGR HI TEMP"

700 910
] [----- (RST) -----
RE 0027

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Rung: 003 RESETS SEQ. TO DISPLAY "SYSTEM O.K."

L1/
 LT27
 112
 ---]X[----- 910 (RST)
 RE 0028
 ----- End of Ladder --- Words used = 00542 -----



Rung: 001										
Time Driven										
/O Address :	18	17	16	15	14	13	12	11	901	
Hex Mask :			8 F			F			-(SQ0)-	
Binary Mask :	0	0	1	1	1	1	1	1	GRP 00	
Step #	Hex Data	Binary Data								Preset Value
00	01	-	-	0	0	0	0	0	1	9000
01	01	-	-	0	0	0	0	0	1	9000
02	01	-	-	0	0	0	0	0	1	9000
03	01	-	-	0	0	0	0	0	1	9000
04	01	-	-	0	0	0	0	0	1	9000
05	01	-	-	0	0	0	0	0	1	9000
06	01	-	-	0	0	0	0	0	1	9000
07	01	-	-	0	0	0	0	0	1	9000
08	01	-	-	0	0	0	0	0	1	9000
09	01	-	-	0	0	0	0	0	1	9000
10	01	-	-	0	0	0	0	0	1	9000
11	01	-	-	0	0	0	0	0	1	0001
12	01	-	-	0	0	0	0	0	1	0001
13	01	-	-	0	0	0	0	0	1	0001
14	01	-	-	0	0	0	0	0	1	0001
15	01	-	-	0	0	0	0	0	1	0001
16	01	-	-	0	0	0	0	0	1	0001
17	01	-	-	0	0	0	0	0	1	0001
18	01	-	-	0	0	0	0	0	1	0001
19	04	-	-	0	0	0	1	0	0	0150
20	06	-	-	0	0	0	1	1	0	9000
21	06	-	-	0	0	0	1	1	0	9000
22	06	-	-	0	0	0	1	1	0	9000
23	06	-	-	0	0	0	1	1	0	9000
24	06	-	-	0	0	0	1	1	0	9000
25	06	-	-	0	0	0	1	1	0	9000
26	11	-	-	0	1	0	10	0	1	9000
27	04	-	-	0	0	0	1	0	0	9000
28	04	-	-	0	0	0	1	0	0	9000
29	04	-	-	0	0	0	1	0	0	9000
30	04	-	-	0	0	0	1	0	0	9000
31	04	-	-	0	0	0	1	0	0	9000
32	04	-	-	0	0	0	1	0	0	9000
33	04	-	-	0	0	0	1	0	0	9000
34	04	-	-	0	0	0	1	0	0	9000
35	04	-	-	0	0	0	1	0	0	9000
36	04	-	-	0	0	0	1	0	0	9000
37	04	-	-	0	0	0	1	0	0	9000
38	04	-	-	0	0	0	1	0	0	9000
39	04	-	-	0	0	0	1	0	0	9000
40	04	-	-	0	0	0	1	0	0	9000
41	04	-	-	0	0	0	1	0	0	9000
42	04	-	-	0	0	0	1	0	0	9000
43	04	-	-	0	0	0	1	0	0	9000
44	04	-	-	0	0	0	1	0	0	9000
45	04	-	-	0	0	0	1	0	0	9000
46	01	-	-	0	0	0	0	0	1	0150
47	09	-	-	0	0	1	0	0	1	9000

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 ADDRESS
 (FROM NEXT
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 ADDRESS

+-----+											
Rung: 055								Event Driven			
+-----+											
/O Address : 418 417 416 415 414 413 412 411 910											
Hex Mask : 3 F -(SQ0)-											
Binary Mask : 0 0 1 1 1 1 1 1 GRP 04											
+-----+											
Step	Hex	Binary								Preset	
#	Data	Data								Value	
+-----+											
00	00	-	-	0	0	0	0	0	0	0001	
01	01	-	-	0	0	0	0	0	1	0001	
02	02	-	-	0	0	0	0	1	0	0001	
03	03	-	-	0	0	0	0	1	1	0001	
04	04	-	-	0	0	0	1	0	0	0001	
05	05	-	-	0	0	0	1	0	1	0001	
06	06	-	-	0	0	0	1	1	0	0001	
07	07	-	-	0	0	0	1	1	1	0001	
08	08	-	-	0	0	1	0	0	0	0001	
09	09	-	-	0	0	1	0	0	1	0001	
10	10	-	-	0	1	0	0	0	0	0001	
11	11	-	-	0	1	0	0	0	1	0001	
12	12	-	-	0	1	0	0	1	0	0001	
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18	18	-	-	0	1	1	0	0	0	0001	
19	19	-	-	0	1	1	0	0	1	0001	
20	20	-	-	1	0	0	0	0	0	0001	
21	21	-	-	1	0	0	0	0	1	0001	
22	22	-	-	1	0	0	0	1	0	0001	
23	23	-	-	1	0	0	0	1	1	0001	
24	24	-	-	1	0	0	1	0	0	0001	
25	25	-	-	1	0	0	1	0	1	0001	
26	26	-	-	1	0	0	1	1	0	0001	
27	27	-	-	1	0	0	1	1	1	0001	
28	28	-	-	1	0	1	0	0	0	0001	
+-----+											

CONFIDENTIAL

INPUT

ress	Element	Rung Number(s)	Instruction	Comment
001	-J\[-	002, 003, 004	SS6	: SVRM CYCLE OFF/ON
002	-J\[-	002	MCR	: MASTER POWER ON
003	-J [-	009	FS1	: SOLVENT RECEIVER TANK HI LEVEL
003	-J\[-	010	FS1	: SOLVENT RECEIVER TANK HI LEVEL
004	-J [-	013	LS9B	CLOSE: BED #1 AIR INLET VALVE #2 CLOSE
004	-J\[-	014, 018	LS9B	CLOSE: BED #1 AIR INLET VALVE #2 CLOSE
005	-J [-	019	LS10B	CLOSE: BED #1 AIR OUTLET VALVE #2 CLOSE
005	-J\[-	020, 024	LS10B	CLOSE: BED #1 AIR OUTLET VALVE #2 CLOSE
006	-J [-	033	LS11B	CLOSE: BED #2 AIR INLET VALVE #2 CLOSE
006	-J\[-	034, 038	LS11B	CLOSE: BED #2 AIR INLET VALVE #2 CLOSE
007	-J [-	039	LS12B	CLOSE: BED #2 AIR OUTLET VALVE #2 CLOSE
007	-J\[-	040, 044	LS12B	CLOSE: BED #2 AIR OUTLET VALVE #2 CLOSE
008	-J [-	011	THS1	: HEAT EXCHANGER HI TEMP
104	-J [-	013	LS9A	OPEN : BED #1 AIR INLET VALVE #2 OPEN
104	-J\[-	014, 016	LS9A	OPEN : BED #1 AIR INLET VALVE #2 OPEN
105	-J [-	019	LS10A	OPEN : BED #1 AIR OUTLET VALVE #2 OPEN
105	-J\[-	020, 022	LS10A	OPEN : BED #1 AIR OUTLET VALVE #2 OPEN
106	-J [-	033	LS11A	OPEN : BED #2 AIR INLET VALVE #2 OPEN
106	-J\[-	034, 036	LS11A	OPEN : BED #2 AIR INLET VALVE #2 OPEN
107	-J [-	039	LS12A	OPEN : BED #2 AIR OUTLET VALVE #2 OPEN
107	-J\[-	040, 042	LS12A	OPEN : BED #2 AIR OUTLET VALVE #2 OPEN
108	-J\[-	008	WFS1	: CONDENSER WATER FLOW
201	-J [-	013	LS1B	CLOSE: BED #1 AIR INLET VALVE #1 CLOSE
201	-J\[-	014, 017	LS1B	CLOSE: BED #1 AIR INLET VALVE #1 CLOSE
202	-J [-	019	LS2B	CLOSE: BED #1 AIR OUTLET VALVE #1 CLOSE
202	-J\[-	020, 023	LS2B	CLOSE: BED #1 AIR OUTLET VALVE #1 CLOSE
203	-J [-	025	LS3B	CLOSE: BED #1 STEAM VALVE CLOSE
203	-J\[-	026	LS3B	CLOSE: BED #1 STEAM VALVE CLOSE
204	-J [-	029	LS4B	CLOSE: BED #1 VAPOR VALVE CLOSE
204	-J\[-	030	LS4B	CLOSE: BED #1 VAPOR VALVE CLOSE

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INPUT

Address	Element	Rung Number(s)	Instruction	Comment
205	-J C-	033	LS5B	CLOSE: BED #2 AIR INLET VALVE #1 CLOSE
205	-J\ C-	034, 037	LS5B	CLOSE: BED #2 AIR INLET VALVE #1 CLOSE
206	-J C-	039	LS6B	CLOSE: BED #2 AIR OUTLET VALVE #1 CLOSE
206	-J\ C-	040, 043	LS6B	CLOSE: BED #2 AIR OUTLET VALVE #1 CLOSE
207	-J C-	045	LS7B	CLOSE: BED #2 STEAM VALVE CLOSE
207	-J\ C-	046	LS7B	CLOSE: BED #2 STEAM VALVE CLOSE
208	-J C-	049	LS8B	CLOSE: BED #2 VAPOR VALVE CLOSE
208	-J\ C-	050	LS8B	CLOSE: BED #2 VAPOR VALVE CLOSE
210	-J C-	012	PR3	: HEAT EXCHANGER HI TEMP RESET
301	-J C-	013	LS1A	OPEN : BED #1 AIR INLET VALVE #1 OPEN
301	-J\ C-	014, 015	LS1A	OPEN : BED #1 AIR INLET VALVE #1 OPEN
302	-J C-	019	LS2A	OPEN : BED #1 AIR OUTLET VALVE #1 OPEN
302	-J\ C-	020, 021	LS2A	OPEN : BED #1 AIR OUTLET VALVE #1 OPEN
303	-J C-	025	LS3A	OPEN : BED #1 STEAM VALVE OPEN
303	-J\ C-	026	LS3A	OPEN : BED #1 STEAM VALVE OPEN
304	-J C-	029	LS4A	OPEN : BED #1 VAPOR VALVE OPEN
304	-J\ C-	030	LS4A	OPEN : BED #1 VAPOR VALVE OPEN
305	-J C-	033	LS5A	OPEN : BED #2 AIR INLET VALVE #1 OPEN
305	-J\ C-	034, 035	LS5A	OPEN : BED #2 AIR INLET VALVE #1 OPEN
306	-J C-	039	LS6A	OPEN : BED #2 AIR OUTLET VALVE #1 OPEN
306	-J\ C-	040, 041	LS6A	OPEN : BED #2 AIR OUTLET VALVE #1 OPEN
307	-J C-	045	LS7A	OPEN : BED #2 STEAM VALVE OPEN
307	-J\ C-	046	LS7A	OPEN : BED #2 STEAM VALVE OPEN
308	-J C-	049	LS8A	OPEN : BED #2 VAPOR VALVE OPEN
308	-J\ C-	050	LS8A	OPEN : BED #2 VAPOR VALVE OPEN

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OUTPUT

ress	Element	Rung Number(s)	Instruction	Comment
011	-] [-	005, 013, 014, 015, 016, 019, 020, 021, 022, 025, 026, 027, 029, 030, 031	SOL1	: BED #1 ADSORB
011	-(U)-	004	SOL1	: BED #1 ADSORB
012	-] [-	013, 014, 017, 018, 019, 020, 023, 024, 025, 026, 028, 029, 030, 032	SOL2	: BED #1 DESORB
012	-] \ [-	002	SOL2	: BED #1 DESORB
012	-(U)-	006	SOL2	: BED #1 DESORB
013	-] [-	005, 033, 034, 035, 036, 039, 040, 041, 042, 045, 046, 047, 049, 050, 051	SOL3	: BED #2 ADSORB
013	-(U)-	003	SOL3	: BED #2 ADSORB
014	-] [-	033, 034, 037, 038, 039, 040, 043, 044, 045, 046, 048, 049, 050, 052	SOL4	: BED #2 DESORB
014	-] \ [-	002	SOL4	: BED #2 DESORB
014	-(U)-	007	SOL4	: BED #2 DESORB
015	-] \ [-	002	LT24	: BED #1 COOLDOWN
016	-] \ [-	002	LT25	: BED #2 COOLDOWN
111	-()-	005	M1	: BLOWER MOTOR
112	-] \ [-	003	AL1/ LT27	: ALARM HORN/BEACON
112	-()-	054	AL1/ LT27	: ALARM HORN/BEACON
113	-] \ [-	054	SOL6	: MAIN STEAM
113	-()-	053	SOL6	: MAIN STEAM

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INTERNAL

ressl	Element	Rung Number(s)	Instruction	Comment
701	-] [-	003, 004	:	SEQUENCER ENABLE
701	-] \ [-	001, 008	:	SEQUENCER ENABLE
701	-()-	002	:	SEQUENCER ENABLE
702	-] [-	006, 007, 054, 081	:	NO CONDENSER WATER FLOW ENABLE
702	-()-	008	:	NO CONDENSER WATER FLOW ENABLE
708	-] [-	006, 007, 054, 082	:	HEAT EXCHANGER HI TEMP ENABLE
708	-(L)-	011	:	HEAT EXCHANGER HI TEMP ENABLE
708	-(U)-	012	:	HEAT EXCHANGER HI TEMP ENABLE
712	-] [-	057	:	BED #1 AIR INLET VALVE #1 NOT OPEN ENABLE
712	-()-	015	:	BED #1 AIR INLET VALVE #1 NOT OPEN ENABLE
713	-] [-	058	:	BED #1 AIR INLET VALVE #1 NOT CLOSED ENABLE
713	-()-	017	:	BED #1 AIR INLET VALVE #1 NOT CLOSED ENABLE
714	-] [-	061	:	BED #1 AIR OUTLET VALVE #1 NOT OPEN ENABLE
714	-()-	021	:	BED #1 AIR OUTLET VALVE #1 NOT OPEN ENABLE
715	-] [-	062	:	BED #1 AIR OUTLET VALVE #1 NOT CLOSED ENABLE
715	-()-	023	:	BED #1 AIR OUTLET VALVE #1 NOT CLOSED ENABLE
716	-] [-	066	:	BED #1 STEAM VALVE NOT CLOSED ENABLE
716	-()-	027	:	BED #1 STEAM VALVE NOT CLOSED ENABLE
717	-] [-	065	:	BED #1 STEAM VALVE NOT OPEN ENABLE
717	-()-	028	:	BED #1 STEAM VALVE NOT OPEN ENABLE
718	-] [-	068	:	BED #1 VAPOR VALVE NOT CLOSED ENABLE
718	-()-	031	:	BED #1 VAPOR VALVE NOT CLOSED ENABLE
719	-] [-	067	:	BED #1 VAPOR VALVE NOT OPEN ENABLE
719	-()-	032	:	BED #1 VAPOR VALVE NOT OPEN ENABLE
720	-] [-	069	:	BED #2 AIR INLET VALVE #1 NOT OPEN ENABLE
720	-()-	035	:	BED #2 AIR INLET VALVE #1 NOT OPEN ENABLE
721	-] [-	070	:	BED #2 AIR INLET VALVE #1 NOT CLOSED ENABLE
721	-()-	037	:	BED #2 AIR INLET VALVE #1 NOT CLOSED ENABLE

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INTERNAL

Id	Js	Element	Rung Number(s)	Instruction	Comment
722		-] [-	073		: BED #2 AIR OUTLET VALVE #1 NOT OPEN ENABLE
722		-()-	041		: BED #2 AIR OUTLET VALVE #1 NOT OPEN ENABLE
723		-] [-	074		: BED #2 AIR OUTLET VALVE #1 NOT CLOSED ENABLE
723		-()-	043		: BED #2 AIR OUTLET VALVE #1 NOT CLOSED ENABLE
724		-] [-	078		: BED #2 STEAM VALVE NOT CLOSED ENABLE
724		-()-	047		: BED #2 STEAM VALVE NOT CLOSED ENABLE
725		-] [-	077		: BED #2 STEAM VALVE NOT OPEN ENABLE
725		-()-	048		: BED #2 STEAM VALVE NOT OPEN ENABLE
726		-] [-	080		: BED #2 VAPOR VALVE NOT CLOSED ENABLE
726		-()-	051		: BED #2 VAPOR VALVE NOT CLOSED ENABLE
727		-] [-	079		: BED #2 VAPOR VALVE NOT OPEN ENABLE
727		-()-	052		: BED #2 VAPOR VALVE NOT OPEN ENABLE
728		-] [-	059		: BED #1 AIR INLET VALVE #2 NOT OPEN ENABLE
728		-()-	016		: BED #1 AIR INLET VALVE #2 NOT OPEN ENABLE
729		-] [-	060		: BED #1 AIR INLET VALVE #2 NOT CLOSED ENABLE
729		-()-	018		: BED #1 AIR INLET VALVE #2 NOT CLOSED ENABLE
730		-] [-	063		: BED #1 AIR OUTLET VALVE #2 NOT OPEN ENABLE
730		-()-	022		: BED #1 AIR OUTLET VALVE #2 NOT OPEN ENABLE
731		-] [-	064		: BED #1 AIR OUTLET VALVE #2 NOT CLOSED ENABLE
731		-()-	024		: BED #1 AIR OUTLET VALVE #2 NOT CLOSED ENABLE
732		-] [-	071		: BED #2 AIR INLET VALVE #2 NOT OPEN ENABLE
732		-()-	036		: BED #2 AIR INLET VALVE #2 NOT OPEN ENABLE
733		-] [-	072		: BED #2 AIR INLET VALVE #2 NOT CLOSED ENABLE
733		-()-	030		: BED #2 AIR INLET VALVE #2 NOT CLOSED ENABLE
734		-] [-	075		: BED #2 AIR OUTLET VALVE #2 NOT OPEN ENABLE
734		-()-	042		: BED #2 AIR OUTLET VALVE #2 NOT OPEN ENABLE

INTERNAL

Address	Element	Runq Number(s)	Instruction	Comment
735	-] [-	076		: BED #2 AIR OUTLET VALVE #2
				NOT CLOSED ENABLE
735	-()-	044		: BED #2 AIR OUTLET VALVE #2
				NOT CLOSED ENABLE

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TIMER/COUNTER/SEQUENCER/RESET

Address	Element	Rung Number(s)	Instruction	Comment
901	-(SQO)-	001	:	2 BED SEQUENCER (TIME DRIVEN)
906	-J C-	006, 007, 054, 056	:	SOLVENT PUMP MALFUNCTION DELAY TIMER
906	-(RTO)-	009	:	SOLVENT PUMP MALFUNCTION DELAY TIMER
906	-(RST)-	010	:	SOLVENT PUMP MALFUNCTION DELAY TIMER
910	-(RST)-	056, 057, 058, 059, 060, 061, 062, 063, 064, 065, 066, 067, 068, 069, 070, 071, 072, 073, 074, 075, 076, 077, 078, 079, 080, 081, 082, 083	:	DATALINER SEQUENCER (EVENT DRIVEN)
910	-(SQO)-	055	:	DATALINER SEQUENCER (EVENT DRIVEN)
917	-J C-	015, 016, 017, 018	:	BED #1 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY
917	-J\NC-	053	:	BED #1 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY
917	-(RTO)-	014	:	BED #1 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY
917	-(RST)-	013	:	BED #1 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY
918	-J C-	021, 022, 023, 024	:	BED #1 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
918	-J\NC-	053	:	BED #1 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
918	-(RTO)-	020	:	BED #1 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
918	-(RST)-	019	:	BED #1 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
919	-J C-	027, 028	:	BED #1 STEAM VALVE MALFUNCTION DELAY
919	-J\NC-	053	:	BED #1 STEAM VALVE MALFUNCTION DELAY
919	-(RTO)-	026	:	BED #1 STEAM VALVE MALFUNCTION DELAY
919	-(RST)-	025	:	BED #1 STEAM VALVE MALFUNCTION DELAY
920	-J C-	031, 032	:	BED #1 VAPOR VALVE MALFUNCTION DELAY
920	-J\NC-	053	:	BED #1 VAPOR VALVE MALFUNCTION DELAY
920	-(RTO)-	030	:	BED #1 VAPOR VALVE MALFUNCTION DELAY
920	-(RST)-	029	:	BED #1 VAPOR VALVE MALFUNCTION DELAY
921	-J C-	035, 036, 037, 038	:	BED #2 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY
921	-J\NC-	053	:	BED #2 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY

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TIMER/COUNTER/SEQUENCER/RESET

Address	Element	Rung Number(s)	Instruction	Comment
921	-(RTO)-	034	:	BED #2 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY
921	-(RST)-	033	:	BED #2 AIR INLET VALVE #1 OR #2 MALFUNCTION DELAY
922	-J C-	041, 042, 043, 044	:	BED #2 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
922	-J\ C-	053	:	BED #2 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
922	-(RTO)-	040	:	BED #2 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
922	-(RST)-	039	:	BED #2 AIR OUTLET VALVE #1 OR #2 MALFUNCTION DELAY
923	-J C-	047, 048	:	BED #2 STEAM VALVE MALFUNCTION DELAY
923	-J\ C-	053	:	BED #2 STEAM VALVE MALFUNCTION DELAY
923	-(RTO)-	046	:	BED #2 STEAM VALVE MALFUNCTION DELAY
923	-(RST)-	045	:	BED #2 STEAM VALVE MALFUNCTION DELAY
924	-J C-	051, 052	:	BED #2 VAPOR VALVE MALFUNCTION DELAY
924	-J\ C-	053	:	BED #2 VAPOR VALVE MALFUNCTION DELAY
924	-(RTO)-	050	:	BED #2 VAPOR VALVE MALFUNCTION DELAY
924	-(RST)-	049	:	BED #2 VAPOR VALVE MALFUNCTION DELAY

05/17/90

II C 1

Control Device Modification History Description of Modification

Date:

10/31/89	Purchase Order for procurement of control device.
10/31/89	Purchase Order for replacement of existing carbon with improved carbon, air monitoring package, valve monitoring package, stainless steel ducts, and stabilizer injection package.
11/23/89	Confirmation of 10/31/89 Purchase Orders.
2/15/90	Installation of new stainless steel ducts.
3/16/90	P.O. Number change to reflect revised equipment (from original contract).
5/29/90	Replaced existing carbon with new acid washed carbon.
6/26/90	Installed starter for stabilizer injection pump.
6/28/90	Install heater lights (indicators) for pumps
7/2/90	Electrical check of starters.
7/5/90	Install dual-control stabilizer injection pump motor control.
7/17/90	Install timer for solvent metering pump.
7/12/90	Remove & replace damaged blower sheave.
8/14/90	Install level control recovered solvent pump.
9/6/91	Install Gas-Tech monitor on exhaust stream & tie Information controls.
12/8/92	Replace defective damper & solenoid on control device. Install vacuum breaker on unit.



GOLD SHIELD SOLVENTS

Division of Detrex Chemical Industries, Inc.

12886 EATON AVE., DETROIT, MICH. 48227 • Area Code 313 Phone 491-4550

PACKING SLIP LISTING CONTENTS AND OUR PURCHASE ORDER NUMBER MUST BE INCLUDED IN EACH PARCEL. NUMBER MUST ALSO APPEAR ON EACH PARCEL. PACKING SLIP ON CARLOAD SHIPMENTS MUST BE PLACED IN AN ENVELOPE AND FASTENED INSIDE OF CAR NEAR DOOR

PURCHASE ORDER

GS 9177

SHIP TO

Detrex Corporation
325 Emmett Ave
Bowling Green, Ky 42101

Attn: Joe Mc Chesney

PLEASE ENTER OUR ORDER FOR THE FOLLOWING SUBJECT TO ALL THE CONDITIONS HEREIN CONTAINED ON THE REVERSE SIDE.

P.O. DATE	DELIVERY REQ.	SHIP VIA	F.O.B.	TERMS
7-31-89				

ITEM	QUANTITY	DESCRIPTION	PRICE
1	1	Installation of Detrex SVRM Model 2-6.5-3300 which includes the following: a) Make all electrical connections (100 Amp disconnect to be installed near unit by others). b) Installation of all duct work including plenums c) Installation of Air Valves d) Installation of Heat Exchangers e) Modifications necessary to properly install unit in facility f) All Travel Expenses g) Mechanical work to connect steam, cooling water, and pump discharge's as necessary. h) Stainless Steel ductwork and plenums	
CONFIDENTIAL			
Total			\$30,779.

ITEM	DATE	REC. NO.	QUAN.	BAL.	CHARGES OR REMARKS

GOLD SHIELD SOLVENTS

BY



GOLD SHIELD SOLVENTS

Division of Detrex Chemical Industries, Inc.

12886 EATON AVE., DETROIT, MICH. 48227 • Area Code 313 Phone 491-4550

PACKING SLIP LISTING CONTENTS AND OUR PURCHASE ORDER NUMBER MUST BE INCLUDED IN EACH PARCEL. NUMBER MUST ALSO APPEAR ON EACH PARCEL. PACKING SLIP ON CARLOAD SHIPMENTS MUST BE PLACED IN AN ENVELOPE AND FASTENED INSIDE OF CAR NEAR DOOR

PURCHASE ORDER

GS

9178

TO

Detrex Corporation
325 Emmett Avenue
Bowling Green, Ky 42101

SHIP TO

Attn: Joe Mc Chesney

PLEASE ENTER OUR ORDER FOR THE FOLLOWING SUBJECT TO ALL THE CONDITIONS HEREIN CONTAINED ON THE REVERSE SIDE.

F.O. DATE	DELIVERY REQ.	SHIP VIA	F.O.B.	TERMS
2-31-89				

ITEM	QUANTITY	DESCRIPTION	PRICE
1	1	Modifications necessary to satisfy Wayne County Air Pollution Control Board requirements and to operate unit as a "Beta Site" as follows:	
		a) Return/rework existing carbon to improve absorption.	
		b) Valve monitoring package, includes modification of valves	
		c) Air monitoring package	\$6,500
		d) Modify 480V Electric Panel to allow for operation on 230V 3 phase power in plant.	\$1,775
		e) Exchange existing plenums and heat exchangers for stainless steel units.	\$9,374
		f) Stabilizer injection package (Metering pump to be furnished by others).	
Total			\$17,649

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ITEM	DATE	REC. NO.	QUAN.	BAL.	CHARGES OR REMARKS

GOLD SHIELD SOLVENTS

BY



DETREX CHEMICAL INDUSTRIES, INC.

325 EMMETT AVENUE, P. O. BOX 569
BOWLING GREEN, KENTUCKY 42101
PHONE: (502) 782-2411 TWX: 810-531-3655

INVOICE
NO.

20-

SALES
ORDER
NO.

72656

S
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Gold Shield Solvents
12886 Eaton Avenue
Detroit, MI 48227

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SAME

No.

No.

MANAGER	SALESMAN Leith	NO 0452	TYPE	REF	WAREHOUSE	OTHER SALESMAN Swan	NO.		
ORDER DATE -23-90	SCHEDULED SHIP DATE 2-28-90	S O DATE 11-23-89	TERMS 30	DAYS NET				SHIPPED FROM (FOB SHIPPING POINT) Bowling Green, KY	
CUSTOMER ORDER NO. 103189	SHIPPED VIA				PPD XX	COLL XX	PPD & CHG.	DATE SHIPPED	MACH. CLAS. 2A

ITEM	DESCRIPTION	TAX	ACCOUNT NUMBER	QUAN. SHIP	AMOUNT
	NO. 2 REVISION ORDER DATED 2-22-90				
	Issued to add the following items:				
	Remake all ductwork to stainless steel.			1	\$9,374.00
D	Add monitoring.			1	\$6,500.00
E	New electrical panel.			1	\$1,775.00
	PREVIOUS TOTAL				\$62,090.00
	NEW TOTAL				\$79,739.00
	(SVRM-2-6.5-3300)				
	CONFIDENTIAL				

ACKNOWLEDGEMENT

Roy Herrewé
SUPERVISOR
ORDER DEPARTMENT

REMARKS:

W. NILSSON TO HANDLE
Ron Swan - Solvent Division



SPRAY BOOTHS AIR MAKE UP UNITS
DUST COLLECTION SYSTEMS
INDUSTRIAL VENTILATION

Nº 7301

AVARD CORPORATION

Savard Sheet Metal, Inc.

8561 W. Chicago, Detroit, Michigan 48204
Phone (313) 931-6880 FAX (313) 931-1820

Date 2-15-90

Terms Net 15 Days
1½ % Service Charge Per Month
if not paid within 30 Days

- Gold Shield Solvents
12886 Eaton
Detroit, MI 48227

Ship To PH#491-4550
Fax#491-8044

Attention Ron Swan

The following is a quotation to provide and install an exhaust duct system for the Solvent Recovery system as specified on the plan provide by the Benham Group drawing #34890060 M-1 and M-2, including:

- A. Providing all material and labor to complete the installation.
- B. To cut and seal all wall and roof openings as specified.
- C. To install the manifold duct sections as provided by Recovery Module Manufacturer.
- D. To provide all scaffolding necessary for duct installation.

Total Investment \$13,777.00

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Signed Stephan A. Wilkacher
SAVARD CORPORATION

ACCEPTANCE date _____ By _____

O. No. _____ Taxable ☐ YES ☐ NO

... materials used are guaranteed to be as specified, and the entire job done in a neat and substantial manner. Any alteration or deviation from the specifications herein agreed upon which involve extra cost of labor and material will be executed only upon orders for same, and will become an extra charge over the sum mentioned in this quotation.

DETREX CORPORATION

D.O.B.S. 44-531-7599

P.O. BOX 64136

DETROIT, MI 48264-0136

BILLING INQUIRIES-502-782-2411

PLEASE REMIT TO ABOVE ADDRESS WITH COPY OF INVOICE

SOLD TO

INVOICE

NUMBER

DATE

20-14514

03/16/90

DETREX CORPORATION

GOLD SHIELD DIV.

12886 EATON AVE

DETROIT

MI 48227

G LEITH

TERMS: 30 DAYS NET

TYPE NR

CASE NO	SOLD TO CUSTOMER NO	MGR	CUSTOMER ORDER NO
12058	27590000	SEE BELOW	LTL-1
SHIP POINT	WHSE	SLSM NO	PPD COLL
BLING GREEN KY	1850452	N	N
VIA			SHIP DATE
			/ /

AINERS	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT
	00) CHANGE PO NUMBER	1		
	<p>THIS ISSUED TO RECORD CHANGE OF PURCHASE ORDER NUMBER FOR THE FOLLOWING ITEMS TO PO #9178 PER SALES ORDER REVISION NO. 2 REMAKE BOOTWORK TO S.S., ADD MONITORING, AND NEW ELECTRICAL PANEL.</p> <p>ORIGINALLY INVOICED ON 2L-14475 AS PO #S173189 SHOULD HAVE BEEN PO NO. 9178.</p>			
	CONFIDENTIAL			

STATEMENT OF ACCOUNT FURNISHED ONLY UPON REQUEST)

TOTAL
AMOUNT

.00

SHIP
TO

DETREX CORPORATION

GOLD SHIELD DIV.

12886 EATON AVE

DETROIT

MI 48227

CCF -

CC

IFC -

GFW -

SELLER REPRESENTS THAT WITH RESPECT TO THE PRODUCTION OF THE ARTICLES AND OR THE PERFORMANCE OF THE SERVICES COVERED BY THIS INVOICE, IT HAS FULLY COMPLIED WITH THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED

SHIP TO
IST NO

17590

03/16/90

ORIGINAL

Grayarc®
P.O. Box 2944
Hartford, CT 06104 - 2944
CALL TOLL FREE 1-800-243-5250

CONFIDENTIAL

REORDER ITEM # F4

STRAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE

AVERITT Exp Via Preston Trucking

(Name of Carrier)

RECEIVED, subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading.

Shipper's No. 5-29-90

Carrier's No.

At 12886 Eaton Avenue, Detroit, Michigan 48227

From GOLD SHIELD SOLVENTS

Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being used throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to carrier on the route to said destination. It is, mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

(Mail or street address of consignee - For purposes of notification only)

Consigned to TIM REILLY
529 Old Port Oliver Road

Destination Scottsville, KY 42164

Zip Code

Delivery Address

Route

(To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Delivering Carrier

Car or Vehicle Initials

No.

NO PACKAGES	HAZARDOUS MATERIALS	Kind of Package Description of Articles, Special Marks, and Exceptions	WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	CHECK COLUMN	Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
6000 Lbs		Activated Carbon	6000			
TOTAL ③ PALLETS		SHRINK WRAPPED				
SEND FREIGHT BILL TO:						
Detrex Corporation						
P.O. Box 1398						
Ashtabula, Ohio 44004						
TOTAL PIECES						

SHIPPER'S CERTIFICATION This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SIGNATURE

TITLE

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."

E - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

GOLD SHIELD SOLVENTS
12886 Eaton Avenue
DETROIT, MICHIGAN 48227

Shipper, Per

Agent, Per

Permanent post office address of shipper

Item # F4 Grayarc, P.O. Box 2944, Hartford, CT 06104-2944
© Wheeler Group, Inc., 1982

T.N.T.

ELECTRIC

CONFIDENTIAL

476-3164

P.O. BOX 52100
LIVONIA, MICHIGAN 48152

INVOICE

#900448

TERMS AS STATED BELOW. 1½% PER MONTH
SERVICE CHARGE WILL BE ADDED ON
DELINQUENT BALANCES.

INVOICE DATE

June 26, 1990

TERMS

30 days

JOB NAME

TO Gold Shield Solvents
12886 Eaton Ave.
Detroit, MI. 48227

DESCRIPTION

PRICE

AMOUNT

Install disconnect and magnetic starter for
new 1 H.P. motor.

3280.80

Labor
Material

\$ 96.00

341.25

7.13

7.90

TOTAL

\$ 437.25

D89-91

437.25

7-3

BBaper
TE Wm

T.N.T.

ELECTRIC

CONFIDENTIAL

476-3164

P.O. BOX 52100
LIVONIA, MICHIGAN 48152

INVOICE

#900456

TERMS AS STATED BELOW. 1½% PER MONTH
SERVICE CHARGE WILL BE ADDED ON
DELINQUENT BALANCES.

INVOICE DATE

June 28, 1990

TERMS

30 days

JOB NAME

Gold Shield Solvents
TO 12886 Eaton Ave.
Detroit, MI. 48227

DESCRIPTION

PRICE

AMOUNT

Install incandescent spot lights over new
carbon absorption machine.

Install indicator lights on heater pumps.

3 2 80 80

7-13

7-90

Labor
Material

\$ 512.00

393.60

D89-91 905.60 A

TOTAL

\$ 905.60

B. Shaper
T. J. Hake

T.N.T.

ELECTRIC

CONFIDENTIAL

476-3164

P.O. BOX 52100
LIVONIA, MICHIGAN 48152

INVOICE

#900463

TERMS AS STATED BELOW. 1½% PER MONTH
SERVICE CHARGE WILL BE ADDED ON
DELINQUENT BALANCES.

TO Gold Shield Solvents
12886 Eaton Ave.
Detroit, MI. 48227

INVOICE DATE

July 2, 1990

TERMS

30 days

JOB NAME

DESCRIPTION

PRICE

AMOUNT

Check wiring for Allen Bradley starter.
Pick up 120volt coil.
Check startup of carbon absorption machine.

328080

8-2 90

TOTAL

\$ 96.00

D89-91

96.00

[Handwritten signature]

T.N.T.

ELECTRIC

CONFIDENTIAL

476-3164

P.O. BOX 52100
LIVONIA, MICHIGAN 48152

INVOICE

#900473

TERMS AS STATED BELOW. 1½% PER MONTH
SERVICE CHARGE WILL BE ADDED ON
DELINQUENT BALANCES.

INVOICE DATE

July 5, 1990 ✓

TERMS

30 days

JOB NAME

TO Gold Shield Solvents
12886 Eaton Ave.
Detroit, MI. 48227

DESCRIPTION

PRICE

AMOUNT

Service call to check motor lock-up.

Install wiring for starter to have auto/manual
capability.

32 8080

Injection (NH₄OH) Pump

08-05-90

Labor
Material

\$ 248.00
53.50

D89-91 301.50

TOTAL

\$ 301.50

[Signature]

T.N.T.

ELECTRIC

CONFIDENTIAL

476-3164

P.O. BOX 52100
LIVONIA, MICHIGAN 48152

INVOICE

#900506

TERMS AS STATED BELOW. 1½% PER MONTH
SERVICE CHARGE WILL BE ADDED ON
DELINQUENT BALANCES.

INVOICE DATE
July 17, 1990

TERMS
30 days net

JOB NAME

Gold Shield Solvents
TO 12886 Eaton Ave.
Detroit, MI. 48227

DESCRIPTION	PRICE	AMOUNT
Install wiring for pump motor.		
Install one hour timer with hold feature.		
328080 Solvent Metering Pump		
Labor		\$ 128.00
Material		✓ 40.25
TOTAL		\$ 168.25

[Signature]

MODEL	SERIAL NO.



THE W. T. HEANEY CO. INC.

23187

AIR CONDITIONING • HEATING • REFRIGERATION
 TELEPHONE: (313) 358-5612
 21750 W. EIGHT MILE RD. • SOUTHFIELD, MICH 48075

NAME <i>DETREX CORP.</i>	TERMS: NET 10TH PLEASE PAY FROM THIS INVOICE	
ADDRESS <i>12886 EATON</i>	DATE <i>7/12/90</i>	
CITY <i>DETROIT MI</i>	P.O. NO. <i>D89-91</i>	
JOB NAME & LOCATION	PART ON ORDER YES NO	COMPLETED YES NO

LS	UNIT PRICE	PRICE
<i>SHEAVE</i>		<i>137.38</i>

DESCRIPTION OF SERVICE	<i>CHECK MOTOR SHEAVE FOUND THREADS DAMAGED PICKED UP & INSTALLED NEW SHEAVE. ADJUSTED BELTS & CHECKED MOTOR AMPERAGE, OK. INSTALLED BELT GUARD</i>
------------------------	---

3. No. *05.*

or Code *240988*
8-11 Act/Prd *8-90*

account	amount
<i>89-91</i>	<i>399.28</i>

prepared by *[Signature]*
 reviewed by *[Signature]*

TOTAL MATERIAL *137.38*

WE CARE

MATERIAL	137	38
1 1/2 HRS LABOR @ 56.00	84	00
TRUCK CHARGE	24	00
ADD L DAYS TRUCK CHARGE		
2 HRS PREMIUM @ 77.00	154	00
TOTAL	399	38

*1 1/2 hrs S.T.
2 hrs O.T.*

[Signature]
[Signature]
[Signature]

CONFIDENTIAL

CUSTOMER'S INVOICE



1973 BRINSTON AVENUE
TROY, MICHIGAN 48063
(313) 689-9950

REPRESENTATIVES & DISTRIBUTORS
PROCESS INSTRUMENTATION
AND EQUIPMENT

800 SERIES EL SWITCHES ORDER SHEET

0054035
DETREX CHEMICAL INDUSTRIES
10088 EATON
P.O. BOX 501
DETROIT, MI 48227

SHIP TO

SHIPPING LIST ...

DETREX CHEMICAL INDUSTRIES
10088 EATON
P.O. BOX 501
DETROIT, MI 48227

☐ Type 4 ☐ Type 5 ☐

CUSTOMER P.O. NO.	SHIP DATE	SALESPERSON	TERMS	TAX CODE
-------------------	-----------	-------------	-------	----------

(Init) — ☐ Stainless Steel ☐

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

nk — ☐ In Tank Bottom ☐

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

☐ Stainless Steel ☐

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

☐

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

☐ Stainless Steel ☐

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

NPT ☐ 1" NPT ☐
Pass ☐ (316SS)

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

SPST ☐ SPST ☐
0 VA 100 VA

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

(Init) — ☐

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

Max. PSIG _____

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

Maximum _____

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

Specific Gravity _____

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

Material _____

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

Stations) — ☐

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

operation for each actuation level
Actuation Levels", back of sheet.
est actuation level with mounting
est actuation level with mounting

DESCRIPTION	ORDERED	SHIPPED	BACK ORD.
-------------	---------	---------	-----------

to on ches**	Switch Operation* (Check Type)	
	N.O.	N.C.

CONFIDENTIAL

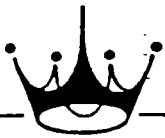
MERCHANDISE	MISCELLANEOUS	DISCOUNT

greater (LO) in ☐

of unit = LO + 2".

Junction Box ☐

DUPLICATE



DETREX CORPORATION

325 EMMETT AVENUE, P.O. BOX 569
BOWLING GREEN, KENTUCKY 42101
PHONE (502) 782-2411 FAX (502) 781-3425

INVOICE NO. **20-**

SALES ORDER NO. **72935**

SOLD TO

Gold Shield Solvents
12886 Eaton Avenue
Detroit, MI 48227


SHIP TO

SAME

No.

No.

MANAGER		SALESMAN Leith		NO 0452	OTHER SALESMAN		NO	
ORDER DATE 9-6-91	SCHEDULED SHIP DATE Sept. 1991	S. O. DATE 9-6-91	TERMS 30 DAYS NET		SHIPPED FROM (FOB SHIPPING POINT) Bowling Green, KY			
CUSTOMER ORDER NO. GS 9178 Rev. 4		SHIPPED VIA			PPD XX	COLL	PPD & CHG	DATE SHIPPED

ITEM	DESCRIPTION	TAX	ACCOUNT NUMBER	QUAN. SHIP	AMOUNT
A	Add field installed Gas Tech Meter.			1	\$9,500
CONFIDENTIAL					
ACKNOWLEDGEMENT					
 SUPERVISOR ORDER DEPARTMENT					

REMARKS:

Tech. Center to handle

DETREX CORPORATION

EQUIPMENT MANUFACTURING DIVISION

325 Emmett Avenue
Bowling Green, KY 42101

(502) 782-2411



FAX (502) 782-6194

December 8, 1992

Detrex Solvent and Environmental Division
12886 Eaton Avenue
Detroit, MI 48227

Attention: Mr. Ron Hritzkowin

Dear Sir:

On September 9, 1992, the Detrex Service Department responded to request for assistance at your facility. Equipment in question was a Solvent Vapor Recovery System - serial number 72656. Customer contact was Ron Swan.

Inspection of the system revealed the following:

- A. Defective damper on bottom of bed #2.
- B. Defective steam solenoid on bed #2.
- C. Deformed bed due to collapse caused by vacuum effect.

Replacement parts for item A and B were ordered and later installed by Detrex Service Technician.

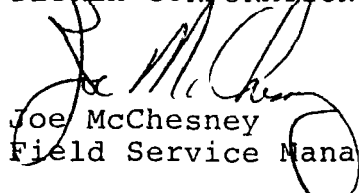
The deformed bed was visually inspected for weld and structural integrity prior to pressure testing by Detrex Technicians. Although the cosmetic appearance is somewhat lacking, the structural integrity and pressurization characteristics are sound.

It is my opinion that no information was discovered to warranty the replacement of this bed.

If I can be of any further assistance, please contact me.

Regards,

DETREX CORPORATION


Joe McChesney
Field Service Manager

CONFIDENTIAL

KWJ ENGINEERING, INC.8440 CENTRAL AVE.
NEWARK, CA 94560PHONE: (510) 794-4296
FAX: (510) 794-4330**FAX MESSAGE**Date: August 7, 1995To: Ron SwanCompany: Detrex CorporationFAX Number (810) 358-58031 pgsFrom: Ken Johnson

Your Ref: _____

Our Ref: 5080702Subject: Gas Tech Monitor.

After your call on the 4th, I searched all the Gas Tech files I could think of, but could not identify the instrument you received in November 1989.

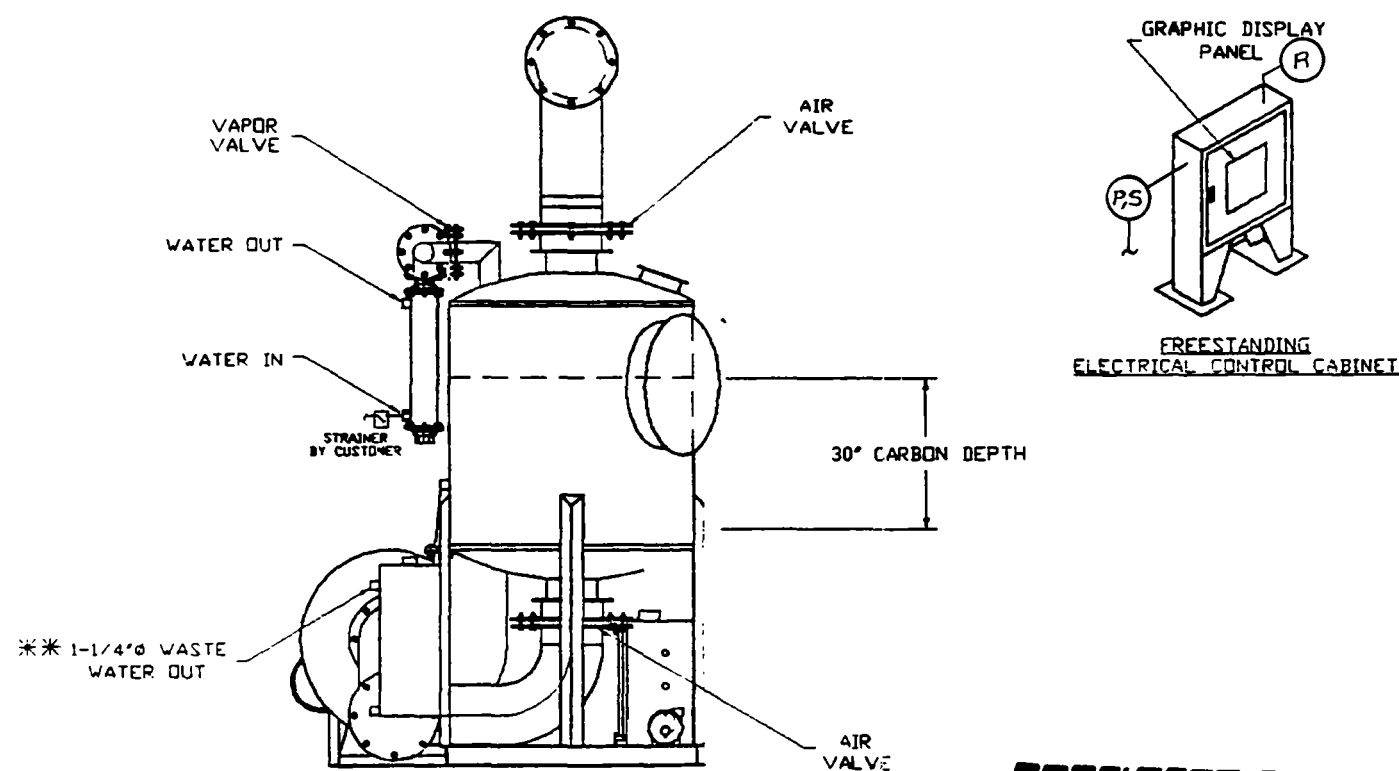
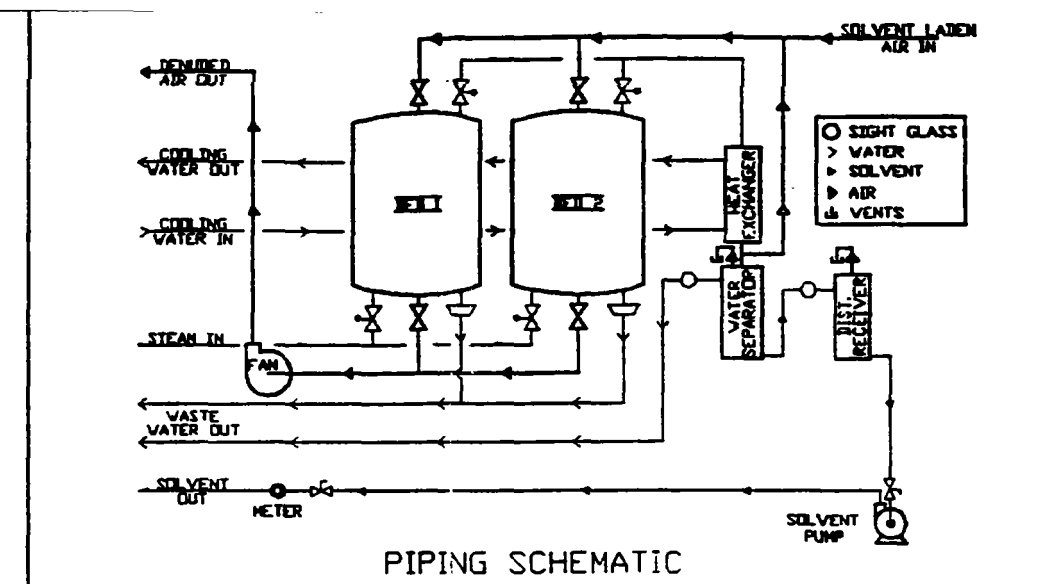
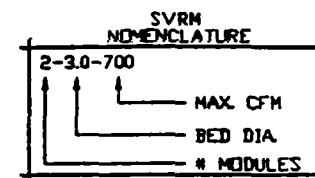
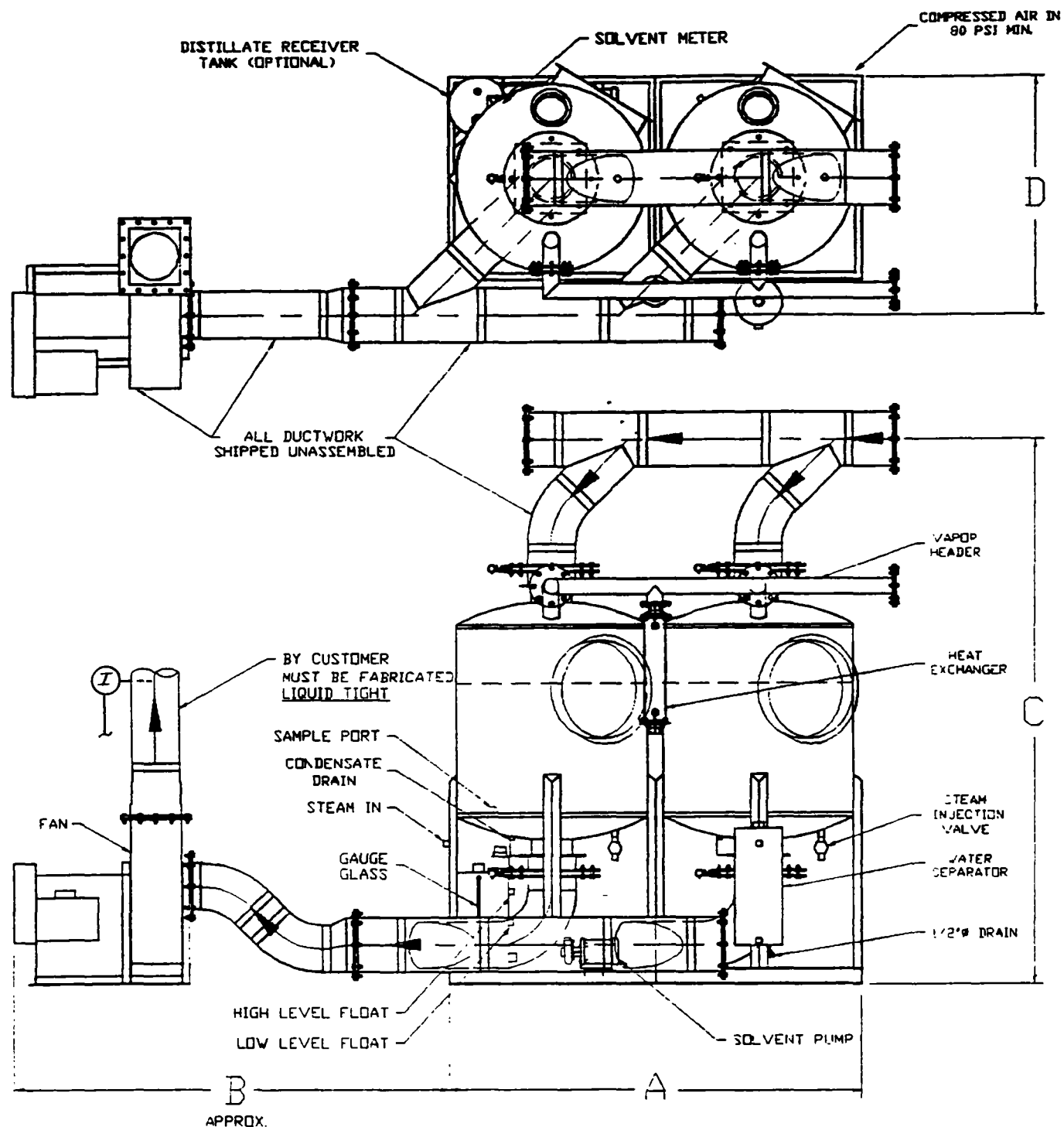
I searched the job files where this would normally be found and could not recognize any corresponding work order. I looked in October and November 1989 shipment records and found no order from Detrex. I also looked at the same records for Orr Safety, the distributor who handled the Detrex account at that time, but could find nothing to match.

I did find records of 10 instruments sold to Detrex for this purpose between June 1990 and August 1991. However, none went to Detroit and none seemed to match the calibration gas, 1-1-1, trichloroethane. Thus I am at a total loss to know how to help you.

Unless you can find any more information such as a serial number, a sales order number, a distributor name or some other new clue, I fear it will be impossible to comply with your request.

Regards,





CONFIDENTIAL

NOTE: CARBON SHIPPED PACKAGED PARTS. MUST BE ADDED IN FIELD

- (I) = Inlet location of monitoring system.
 (PS) = Pump and Sensor location.
 (R) = Recorder

** MUST BE MONITORED BY CUSTOMER FOR ACCEPTABLE PPM LEVELS OF DISSOLVED SOLVENT IN WATER.

NOTE: THIS DRAWING FOR CONCEPT AND PROPOSAL PURPOSES ONLY.

SIZE	A	B	C	D	BLOWER H.P.	MAX CFM	INLET DUCT	OUTLET DUCT	VAPOR HEADER	STEAM INLET	STEAM REQD. (LBS./HR.)	WATER CONNECTIONS		WATER REQD. (GPM)		APPROX. SHIPPING WEIGHT	LBS CARBON PER BED
												TOWARD BED IN 25° RISE	CITY 65° IN 50° RISE	TOWARD BED IN 25° RISE	CITY 65° IN 50° RISE		
3.0	6'-8"	6'-0"	11'-8"	4'-1"	3	700	8	8	2' 00"	3/4	200	1	3/4	15	8	1000	900
3.5	7'-9"	6'-3"	12'-8"	4'-7"	3	960	10	10	4' 00"	1-1/4	300	1-1/4	1	23	12	1200	1000
4	8'-8"	7'-3"	12'-8"	5'-1"	5	1200	12	12	4' 00"	1-1/4	500	1-1/2	1-1/4	40	20	1500	1400
	11'-0"	8'-3"	12'-8"	6'-1"	7.5	1900	14	14	4' 00"	2	700	2	1-1/4	60	30	2000	2100
4.5	14'-0"	9'-0"	13'-10"	7'-7"	10	2900	16	16	6' 00"	2X1-1/2	1200	(2X)2	(2X)1-1/2	90	45	2600	3600

DATE	CHANGE	BY	DR	COORD	THIS PRINT PROPERTY OF	C.A.B. FILE
			CK	SAH	DETREX CORP.	SVRM2PRP
			APP		2 BED SOLVENT VAPOR RECOVERY MODULE	S.O. #
			SCALE	DATE	MONITORING DEVICE	APP #
			NONE	1/22/89		D-2-SVRM-GA

II. C 2

Operating Parameter: Concentration of chlorinated Hydrocarbon (V.O.C.) in effluent gas stream. Constituents of concern include Trichloroethylene, 1,1,1- Trichloroethane, Perchloroethylene, Methylene Chloride and Trichlorotrifluoroethane.

Monitoring Device: The monitoring device used is a GasTech Organic Vapor Analyzer. The unit was manufactured by GasTech specifically for use with chlorinated hydrocarbons. Specifications on the GasTech unit are not available from the manufacturer (see attached correspondence).

Diagram of monitoring sensor location: A diagram of the monitoring system components is attached

II. C 3

Detrex Corporation has connected each affected vent to the duct work leading to the control device. The ductwork has been equipped with blast gates at each pick up point (affected vent) location. The system was then balanced such that the volume of air pulled at each pick up point location exceeds the maximum emission rate from the affected vent.

Therefore, it is Detrex' position that a Flow Indicator at each affected vent is not needed.

II. C 4

Detrex Corporation has installed an electronic control panel on the control device which provides continuous indication of the following parameters:

- 1. BedInlet Valve position (open / closed)**
- 2. Bed Exhaust Valve position (open / closed)**
- 3. Bed Activity (Adsorb, Desorb, Cool - Down, Standby).**
- 4. Condenser Water Flow (Flow / No Flow)**
- 5. Steam Valve Position (open / closed)**

In addition Detrex has equipped the control device with a monitoring device with continuous recorder in the exhaust vent stream from the carbon beds. (The monitoring device is the GasTech unit which was previously mentioned).

II C 5

A Detrex employee inspects the monitoring device at least once a day to ensure the system is functioning.

An Inspection Form, "Weekly Emission Control Device Monitoring Schedule" has been developed to demonstrate compliance with the daily inspection requirement. A sample of the form is attached.

DETREX CORPORATION
WEEKLY EMISION CONTROL DEVICE MONITORING SCHEDULE
12886 EATON AVE. DETROIT MI

EXAMPLE

DAY	ABSORBENT BED NUMBER	TIME	EXHAUST CONTAMINANT READING (PPM)	ABSORBENT BED NUMBER	TIME	EXHAUST CONTAMINANT READING (PPM)	CORRECTIVE ACTION REQUIRED
MONDAY							
TUESDAY							
WEDNESDAY							
THURSDAY							
FRIDAY							
SATURDAY							
SUNDAY							
COMMENTS:							

DETREX CORPORATION
WEEKLY EMISION CONTROL DEVICE MONITORING SCHEDULE
12886 EATON AVE. DETROIT MI

DAY	ABSORBENT BED NUMBER	TIME	EXHAUST CONTAMINANT READING (PPM)	ABSORBENT BED NUMBER	TIME	EXHAUST CONTAMINANT READING (PPM)	CORRECTIVE ACTION REQUIRED
MONDAY							
TUESDAY							
WEDNESDAY							
THURSDAY							
FRIDAY							
SATURDAY							
SUNDAY							
COMMENTS:							

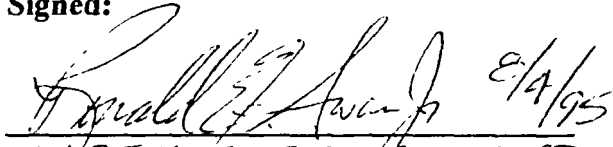
INSPECTOR'S SIGNATURE: _____

WEEK ENDING: _____

40 CFR 264.1035 (b) (iv) Certification Statement

I certify, under penalty of law, that the operating parameters used in the design analysis of the Detrex Model SVRM 2-6.5-3300 reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

Signed:


ON BEHALF OF DETREX CORP.

Ronald E. Swan, Jr. - CHMM, PE

Manager of Corporate Engineering

Detrex Corporation.

40 CFR 264.1035 (b) (iv) Certification Statement

I certify, under penalty of law, that the Detrex Model SVRM 2-6.5-3300 is designed to operate at an efficiency of 95% or greater unless the total organic concentration limit of 40 CFR 264.1032(a) is achieved at an efficiency less than 95% weight percent or the total organic emission limit of 40 CFR 264.1032(a) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent.

Signed:

Detrex Corporation, Equipment Division.

IV A 2

Maintenance records for each waste management unit: A list of each waste management unit which includes equipment identification number, approximate location within the facility, type of equipment, and action needed for compliance is attached.

The ppm weight percent of organics in the waste is not given to Detrex' knowledge that all liquids processed are hazardous waste.

The state of the hazardous waste is not given since Detrex processes only liquid hazardous wastes.

The method of compliance is not given since all the equipment are monitored as required by the standard. Equipment which is found to be leaking, as evidenced by > 500 ppm V.O.C. above background, are noted and scheduled for repair (if repairs cannot be effectuated immediately).

IV B

A permanent, weatherproof and visible identification tag was applied to each waste management unit subjected to the standard prior to implementing the monitoring program. Information regarding detection and date of leak detection are recorded on the monitoring forms.

In the event that the waste management unit must be removed from service, the tag may be temporarily removed in order to effect repairs. Prior to placing the unit back in service, the tag is replaced.

With the exception of Operator ID, all information required to demonstrate compliance are recorded in the facility AA/BB Monitoring Report. (The Detrex employee responsible for conducting the monitoring, signs the forms upon completion).

IV C

The equipment subject to the requirements of this sub-part are identified as tags 001 through 280. This list was given previously.

The list of equipment designated as no detectible emissions is found in the results of the AA/BB Monitoring conducted at the facility. The list is presented in an attachment which follows. The designation is signed by the owner / operator's designee.

The monitoring results include the date of each compliance test, the background measured during each test (is conservatively taken as 0 ppm as calibrated), and the maximum instrument reading during each test.

There are no pressure relief devices required to comply with the standard, hence there is no list required.

There is no equipment operated in vacuum service at the facility, hence there is no list required.

IV D A

Detrex does not utilize double mechanical seal pumps, therefore this requirement is not applicable.

IV D B

Detrex does not utilize compressors in hazardous waste service, therefore this requirement is not applicable.

IV E 1

An analysis of the design capacity of each hazardous waste management unit is as follows:

<u>Item #</u>	<u>Description</u>	<u>Design Capacity</u>
12	F002 Tank	3,400 Gallons
22	F001 Tank	4,200 Gallons
13	Detrex 5-350 Still	350 Gal/Hr.
14	Detrex 5-600 Still	600 Gal/Hr.
15	DCI D-500 Still	500 Gal/Hr.
24	DCI D-500 Still	500 Gal/Hr.
17	Still Bottoms Tank	5,000 Gallons
26	Detrix SVRM Unit	3,000 CFM (Nominal)

The SVRM Unit was designed to accomodate the emissions from all process unit as well as tanks at the facility. Calculations are available from the engineer, if necessary.

IV E 2

Typical analytical results for each type of waste stream have been included previously. Based on the profile forms completed by the generator, Detrex believes that all of the waste processed is hazardous waste. Up-to-date analytical reports for each waste stream are retained in the Master File in the laboratory at the facility.

IV F

Detrex intends to comply with the provisions of 40 CFR 60 Subpart V by extending the procedures incorporated in it's current 40 CFR 26 cent subpart BB monitoring to the affected equipment.

V A

Detrex utilized detailed design documentation and confirmatory testing to demonstrate compliance at the facility, hence test data is not required.

V B

The detailed design documentation regarding the control device was furnished previously in section two.

V C 1

The detailed design documentation is part of the Operating Record maintained at the facility.

V C 2

Monitoring, Operating and Inspection documentation is included in Section 5 of the 40 CFR 264 Subpart AA-BB Compliance Log in the operating Record maintained at the facility.

AIR MONITORING TEST RESULTS

<u>Tag</u> <u>Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1</u> <u>(ppm)</u>	<u>22</u>	<u>Reading2</u> <u>(ppm)</u>	<u>Date3</u>	<u>Reading3</u> <u>(ppm)</u>	<u>Average</u> <u>Reading</u>	<u>Com</u>	<u>L:</u>
001	2" T ,Drum pump discharge.	2/16/93	1.6	2/18/93	24	2/22/93	19	14.9		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
002	Drum pump discharge Valve.	2/16/93	0.7	2/18/93	23.5	2/22/93	19.2	14.5		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
003	2" Dump Pump line : Elbow and Tee.	2/16/93	6.3	2/18/93	18.8	2/22/93	35.1	20.1		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
004	2" Drum Pump line manifold :Two Tees	2/16/93	32.4	2/18/93	60.3	2/22/93	32.9	41.9		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
005	2" Drum Pump manifold line to Tank #17:Elbow end union.	2/16/93	18.8	2/18/93	170.9	2/22/93	34.8	74.8		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
006	2" Drum Pump manifold line to Tank #22:Elbow and union.	2/16/93	23.9	2/18/93	161.9	2/22/93	41.1	75.6		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
007	Drum pump discharge valve to Tank #17.	2/16/93	29.3	2/18/93	214.9	2/22/93	48.7	97.6		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
008	Drum pump discharge valve to Tank #12.	2/16/93	29.8	2/18/93	188.2	2/22/93	41.9	86.6		
		Background 30 ppm		Background 150 ppm		Backgroun 30 ppm				

Operator Hari Hamawi: Hari Hamawi: Hari Hamawi:
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<u>Tag Numb.</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Cor</u>	<u>t:</u>
009	Drum pump discharge valve to Tank #22.	2/16/93	28.6	2/18/93	201.6	2/22/93	39.7	90.0		
		Background 30 ppm		Background 150 ppm		Background 30 ppm				
010	2" Drum pump discharge line: overhead tee and elbow to Tank #17.	2/16/93	13.4	2/18/93	169.1	2/22/93	25	69.2		
		Background 14 ppm		Background 150 ppm		Background 22 ppm				
011	2" drum pump discharge line: overhead cleanout tee.	2/16/93	12.5	2/18/93	210	2/22/93	26	82.8		
		Background 14 ppm		Background 150 ppm		Background 22 ppm				
012	2" Clean Out: Tee	2/16/93	19.2	2/18/93	180	2/22/93	22	73.7		
		Background 14 ppm		Background 170 ppm		Background 22 ppm				
013	2" Drum pump discharge line: overhead elbow to Tank #12.	2/16/93	15.6	2/18/93	190	2/22/93	24	76.5		
		Background 14 ppm		Background 170 ppm		Background 22 ppm				
014	2" Drum pump discharge line: overhead elbow to Tank #22.	2/16/93	14.3	2/18/93	160	2/22/93	23	65.8		
		Background 14 ppm		Background 250 ppm		Background 22 ppm				
015	2" at top of Tank #22: Tee and Union	2/16/93	20.7	2/18/93	300	2/23/93	29	116.6		
		Background 24-25 ppm		Background 250 ppm		Background 22 ppm				
016	2" at top of Tank #22: Two tees and Union.	2/16/93	26.5	2/18/93	320	2/23/93	28	124.8		
		Background 24-25 ppm		Background 250 ppm		Background 22 ppm				

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments</u>
017	2" reducing coupling and 1 1/2" elbow at top of Tank #22 from Detrex Still.	2/16/93	22.2 Background 24-25 ppm	2/18/93	280 Background 200 ppm	2/23/93	25 Background 22 ppm	109.1	
018	1 1/2" Detrex Still discharge line to Tank #22: overhead elbow located top of Detrex still #14.	2/16/93	18 Background 24-25 ppm	2/18/93	200 Background 200 ppm	2/23/93	22 Background 22 ppm	80.0	
019	1 1/2" top of Detrex Still #14 Discharge line to Tank #12: Elbow and Union.	2/16/93	17.6 Background 24-25 ppm	2/18/93	208 Background 200 ppm	2/23/93	24 Background 22 ppm	83.2	
020	1 1/2" top of Detrex Still #14 discharge pipe to Tank #17: overhead elbow	2/16/93	25.5 Background 24-25 ppm	2/18/93	210 Background 200 ppm	2/23/93	28 Background	87.8	
021	1 1/4" top Detrex Still #14 fill line from Tank #22: overhead elbow.	2/16/93	22.6 Background 24-25 ppm	2/18/93	180 Background 200 ppm	2/23/93	27 Background 22 ppm	76.5	
022	1 1/2" Top east side Detrex Still #14 Feed Line from Tank #12: overhead elbow.	2/16/93	18.8 Background 24 ppm	2/18/93	190 Background 180 ppm	2/23/93	23 Background 22 ppm	77.3	
023	1 1/2" Detrex Still #14 Feed line from Tank #22: overhead coupling.	2/16/93	16.1 Background 24 ppm	2/18/93	220 Background 180 ppm	2/23/93	24 Background 22 ppm	86.7	
024	1 1/4" Detrex Still #14 Feed line from freed pump Tank #22: overhead elbow and check valve.	2/16/93	21.3 Background 24 ppm	2/18/93	180 Background 180 ppm	2/23/93	22 background 22 ppm	74.4	

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Corr</u>	<u>It:</u>
025	1" Detrex Still #13 fill line from Tank #22: overhead elbow.	2/16/93	28.2 Background 24 ppm	2/18/93	175 Background 180 ppm	2/23/93	21 Background 20 ppm	74.7		
026	1" Detrex Still #13 fill line from Tank #22: overhead coupling.	2/16/93	22.7 Background 24 ppm	2/18/93	200 Background 180 ppm	2/23/93	24 Background 20 ppm	82.2		
027	1 1/4" Detrex Still #14 fill line from Tank #22: overhead coupling.	2/16/93	19.1 Background 24 ppm	2/18/93	210 Background 180 ppm	2/23/93	26 Background 20 ppm	85.0		
028	1" Detrex Still #13 fill line from Tank #22: overhead coupling.	2/16/93	19.5 Background 24 ppm	2/18/93	370 Background 270 ppm	2/23/93	28 Background 20 ppm	139.2		
029	1" at Detrex Still #13 fill line from Tank #22: elbow.	2/16/93	20.4 Background 24 ppm	2/18/93	290 Background 270 ppm	2/23/93	26 Background 20 ppm	112.1		
030	1" at top Detrex Still #13 fill line from Tank #22: overhead coupling.	2/16/93	20.8 Background 24 ppm	2/18/93	285 Background 270 ppm	2/23/93	25 Background 20 ppm	110.3		
031	1 1/4" at Detrex Still #13 fill line from Tank #12: elbow.	2/16/93	22.7 Background 24 ppm	2/18/93	280 Background 270 ppm	2/23/93	26 Background 24 ppm	109.6		
032	1 1/2" Detrex Still #14 drain line to Tank #17: elbow and coupling.	2/16/93	29.7 Background 30-40 ppm	2/18/93	260 Background 270 ppm	2/23/93	29 Background 24 ppm	106.2		

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>e2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Con</u>	<u>it:</u>
033	3/4" steam line to Tank #22 discharge: elbow and union.	2/16/93	19.8	2/19/93	24	2/23/93	27	23.6		
		Background 8-16 ppm		Background 14 ppm		Background 24 ppm				
034	3/4" steam line at Tank #22 discharge: two elbows.	2/16/93	13.5	2/19/93	12	2/23/93	41	22.2		
		Background 8-16 ppm		Background 14 ppm		Background 19 ppm				
035	Top valve discharge Tank #22.	2/16/93	11.4	2/19/93	24	2/23/93	38	24.5		
		Background 8-16 ppm		Background 14 ppm		background 19 ppm				
036	Bottom valve discharge Tank #22	2/16/93	9.2	2/19/93	18	2/23/93	28	18.4		
		Background 8-16 ppm		Background 14 ppm		Background 19 ppm				
037	2" at discharge Tank #22: union and tee.	2/16/93	7.7	2/19/93	16	2/23/93	18	13.9		
		Background 8-16 ppm		Background 14 ppm		Background 19 ppm				
038	2" at discharge Tank #22: elbow and union.	2/16/93	10.9	2/19/93	16	2/23/93	22	16.3		
		Background 8-16 ppm		Background 14 ppm		Background 19 ppm				
039	2" from discharge Tank #22: coupling.	2/16/93	12.8	2/19/93	10	2/23/93	20	14.3		
		Background 8-16 ppm		Background 14 ppm		Background 19 ppm				
040	2" discharge reducing coupling to 1 1/4" union pump suction line Tank #22.	2/16/93	32.9	2/19/93	20	2/23/93	31	28.0		
		Background 30-40 ppm		Background 16 ppm		Background 30 ppm				

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments:</u>
041	1 1/4" Feed pump Detrex Still #14 from Tank #22: coupling.	2/16/93	32.5 Background 30-40 ppm (Pump running -	2/19/93	24 Background 16 ppm	2/23/93	30 Background 30 ppm	28.8	
042	1 1/4" discharge line from feed pump to Detrex Still #14: union.	2/16/93	35.4 Background 30-40 ppm	2/19/93	25 Background 15 ppm	2/23/93	28 Background 22 ppm	29.5	
043	Feed pump valve to Detrex #14.	2/16/93	37.2 Background 30-40 ppm	2/19/93	26 Background 15 ppm	2/23/93	26 Background 22 ppm	29.7	
044	1 1/4" Feed pump line Detrex Still #13: Elbow and union.	2/16/93	33.2 Background 30-40 ppm	2/19/93	14 Background 15 ppm	2/23/93	24 Background 22 ppm	23.7	
045	1 1/4" Feed pump line Detrex Still #13: tee.	2/16/93	49.8 Background 30-40 ppm	2/19/93	21 Background 15 ppm	2/23/93	26 Background 22 ppm	32.3	
046	1 1/4" check valve feed pump Detrex Still #13.	2/16/93	30.5 Background 30-40 ppm	2/19/93	20 Background 15 ppm	2/23/93	28 Background 22 ppm	26.2	
047	1 1/4" Feed pump line Detrex Still #13: union.	2/16/93	33.4 Background 30-40 ppm	2/19/93	29 Background 15 ppm	2/23/93	30 Background 22 ppm	30.8	
048	Feed pump valve Detrex Still #13.	2/16/93	31.4 Background 30-40 ppm	2/19/93	30 Background 15 ppm	2/23/93	27 Background 22 ppm	29.5	

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments</u>
049	2" Feed pump line from Tank #22 to DCI #24: union.	2/16/93	30.8	2/19/93	12	2/23/93	24	22.3	
		Background 30-40 ppm		Background 15 ppm		Background 22 ppm			
050	2" Discharge line Tank #22 to DCI #24: Elbow "south wall"	2/16/93	32.1	2/19/93	20	2/23/93	24	25.4	
		Background 30-40 ppm		Background 15 ppm		Background 22 ppm			
051	Discharge valve Tank #22 to DCI #24 on the south wall.	2/16/93	30.7	2/19/93	24	2/23/93	22	25.6	
		Background 30-40 ppm		Background 15 ppm		Background 22 ppm			
052	2" Discharge line Tank #22 to DCI #24: Two elbows "south wall"	2/16/93	29.9	2/19/93	29	2/23/93	24	27.6	
		Background 30-40 ppm		Background 15 ppm		Background 22 ppm			
053	Detrex Still #14 drain valves.	2/16/93	25.2	2/19/93	180	2/23/93	118	107.7	
		Background 30 ppm		Background 130		Background 25 ppm		Leaks due to mechanical failure.	
054	3" Detrex Still #14 drain line: elbow "south wall"	2/16/93	30.8	2/19/93	120	2/23/93	28	59.6	
		Background 30 ppm		Background 130		Background 25 ppm			
055	2" Detrex Still #14 drain line: union "south wall"	2/16/93	36	2/19/93	34	2/23/93	23	31.0	
		Background 30 ppm		Background 28 ppm		Background 25 ppm			
056	2" Detrex Still #14 drain line to DCI #24: tee and elbow "south wall"	2/16/93	30.5	2/19/93	37	2/23/93	22	29.8	
		Background 30 ppm		Background 28 ppm		Background 20 ppm			

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>e2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Corr</u>	<u>1:</u>
057	At Detrex Still #14 drain line to DCI #24	2/16/93	26.2	2/19/93	26	2/23/93	19	23.7		
		Background 30 ppm		Background 28 ppm		Background 20 ppm				
058	2" Detrex Still #14 drain line to drain pump: tee	2/16/93	28	2/19/93	24	2/23/93	26	26.0		
		Background 30 ppm		Background 28 ppm		Background 20 ppm				
059	Detrex Still #14 drain line to DCI #15	2/16/93	26.2	2/19/93	26	2/23/93	20	24.1		
		Background 30 ppm		Background 28 ppm		Background 20 ppm				
060	Detrex Still #14 drain line to drain pump	2/16/93	27.8	2/19/93	24	2/23/93	20	23.9		
		Background 30 ppm		Background 28 ppm		Background 20 ppm				
061	2" Detrex Still #14 drain line above valve #059: elbow	2/16/93	25.4	2/19/93	22	2/23/93	21	22.8		
		Background 30 ppm		Background 28 ppm		Background 28 ppm				
062	2" Drain pump drain line, east of valve #060: Two elbows and union	2/16/93	27.3	2/19/93	28	2/23/93	24	26.4		
		Background 30 ppm		Background 28 ppm		Background 28 ppm				
063	2" Drain pump line Detrex Still #13: Tee and union	2/16/93	29.8	2/19/93	27	2/23/93	22	26.3		
		Background 30 ppm		Background 28 ppm		Background 22 ppm				
064	2" Drain pump line Detrex Still #13 on the south wall: elbow	2/16/93	42.9	2/19/93	31	2/23/93	18	30.6		
		Background 30 ppm		Background 28 ppm		Background 28 ppm				

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<u>Tag</u> <u>Number</u>	<u>Location</u> <u>Description</u>	<u>Date1</u>	<u>Reading1</u> <u>(ppm)</u>	<u>Date2</u>	<u>Reading2</u> <u>(ppm)</u>	<u>Date3</u>	<u>Reading3</u> <u>(ppm)</u>	<u>Average</u> <u>Reading</u>	<u>Con</u>	<u>dt</u>
065	2" Drain pump line to Detrex Still #13: Elbow and tee	2/16/93	40 Background 35-40 ppm	2/19/93	30 Background 30 ppm	2/23/93	24 Background 22 ppm	31.3		
066	Detrex Still #13 drain valve. Note: Small amount of liquid & steam seal - tighten	2/16/93	70 Background 35-40 ppm Note	2/19/93	30 Background 30 ppm	2/23/93	34 Background 22 ppm	44.7		
067	1/2" Detrex Still #13 drain line connected to steam line: elbow and union	2/16/93	54 Background 35-40 ppm	2/19/93	42 Background 30 ppm	2/23/93	30 Background 22 ppm	42.0		
068	1/2" Detrex Still #13 drain line to steam line: elbow.	2/16/93	56 Background 35-40 ppm	2/19/93	50 Background 30 ppm	2/23/93	36 Background 22 ppm	47.3		
069	1/2" Steam line from Detrex Still #13 drain line union	2/16/93	51 Background 35-40 ppm	2/19/93	52 Background 30 ppm	2/23/93	22 Background 20 ppm	41.7		
070	1/2" Steam line from Detrex Still #13 drain line: tee. and 1/2" gate valve	2/16/93	49 Background 35-40 ppm	2/19/93	49 Background 30 ppm	2/23/93	21 Background 20 ppm	39.7		
071	1/2" Steam line from Detrex Still #13 drain line: union and tee	2/16/93	49 Background 35-40 ppm	2/19/93	50 Background 30 ppm	2/23/93	23 Background 20 ppm	40.7		
072	2" Detrex Still #13 drain outlet	2/16/93	52 Background 35-40 ppm	2/19/93	34 Background 30 ppm	2/23/93	24 Background 20 ppm	36.7		

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments:</u>
073	2" Detrex Still drain pump: two elbows	2/16/93	44 Background 35-40 ppm	2/19/93	35 Background 30 ppm	2/23/93	26 Background 25 ppm	35.0	
074	Detrex Still drain pump inlet	2/16/93	42 Background 35-40 ppm	2/19/93	38 Background 30 ppm	2/23/93	30 Background 25 ppm	36.7	
075	Pump stuffing box	2/16/93	44 Background 35-40 ppm	2/19/93	60 Background 30 ppm	2/23/93	98 Background 25 ppm	67.3	Leaks due to mechanical failure.
076	2" Detrex Still drain pump line: elbow and union	2/16/93	43 Background 35-40 ppm	2/19/93	49 Background 45 ppm	2/23/93	28 Background 21 ppm	40.0	
077	Detrex Still drain pump	2/16/93	44 Background 35-40 ppm	2/19/93	52 Background 45 ppm	2/23/93	20 Background 21 ppm	38.7	
078	Detrex Still drain pump line basket strainer	2/16/93	45 Background 35-40 ppm	2/19/93	50 Background 45 ppm	2/23/93	22 Background 21 ppm	39.0	
079	2" outlet from the basket strainer: elbow and union	2/16/93	44 Background 35-40 ppm	2/19/93	53 Background 45 ppm	2/23/93	20 Background 21 ppm	39.0	
080	2" outlet from the basket strainer: elbow	2/16/93	43 Background 35-40 ppm	2/19/93	49 Background 45 ppm	2/23/93	23 Background 21 ppm	38.3	

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<u>Tag Num1</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
081	2" Detrex Still drain pump line below valve #083: Tee	2/16/93	46 Background 35-40 ppm	2/19/93	52 Background 45 ppm	2/23/93	20 Background 21 ppm	39.3	
082	2" Detrex Still drain pump line below valve #085: elbow and tee	2/16/93	45 Background 35-40 ppm	2/19/93	50 Background 45 ppm	2/23/93	20 Background 21 ppm	38.3	
083	Detrex Still drain pump line to DCI #15	2/16/93	48 Background 35-40 ppm	2/19/93	59 Background 45 ppm	2/23/93	19 Background 21 ppm	42.0	
084	Detrex Still drain pump line to Tank #12	2/16/93	49 Background 35-40 ppm	2/19/93	64 Background 60 ppm	2/23/93	22 Background 22 ppm	45.0	
085	From Detrex Still drain pump to Tank #22	2/16/93	52 Background 35-40 ppm	2/19/93	70 Background 60 ppm	2/23/93	24 Background 21 ppm	48.7	
086	2" Drain line above valve #085.	2/16/93	40 Background 35-40 ppm	2/19/93	80 Background 60 ppm	2/23/93	22 Background 21 ppm	47.3	
087	2" Detrex Still #14 outlet on the east side: Elbow and Tee	2/16/93	61 Background 35-40 ppm	2/19/93	68 Background 60 ppm	2/23/93	20 Background 21 ppm	49.7	
088	1 1/4" Detrex Still #14 outlet on east side: Elbow and Tee	2/16/93	59 Background 55 ppm	2/19/93	70 Background 60 ppm	2/23/93	20 Background 22 ppm	49.7	

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments:</u>
089	Detrex Still #14 outlet on east side Note: Small amount of liquid & steam seal - tighten	2/16/93	70 Background 55 ppm	2/19/93	72 Background 60 ppm	2/23/93	20 Background 22 ppm	54.0	
090	Detrex Still #14 on the east side	2/16/93	64 Background 55 ppm	2/19/93	70 Background 60 ppm	2/23/93	24 Background 24 ppm	52.7	
091	1 1/4" Detrex Still #14 east side feed line: union	2/16/93	70 Background 55 ppm	2/19/93	65 Background 60 ppm	2/23/93	26 Background 22 ppm	53.7	
092	2" Elbow southwest wall feed pump line Tank #22 to DCI Still #24: Elbow	2/16/93	53 Background 45-50 ppm	2/19/93	24 Background 16 ppm	2/22/93	15 Background 10 ppm	30.7	
093	2" Elbow Southwest wall feed pump line to DCI #15. From Detrex Still #14: Elbow	2/16/93	47 Background 45-50 ppm	2/19/93	20 Background 16 ppm	2/22/93	10 Background 10 ppm	25.7	
094	2" Coupling from Detrex Still #14 to DCI #15: Coupling	2/16/93	45 Background 45-50 ppm	2/19/93	18 Background 16 ppm	2/22/93	17 Background 10 ppm	26.7	
095	2" Elbow from Detrex Still #14 drain line to DCI #24: Elbow	2/16/93	45 Background 45-50 ppm	2/19/93	18 Background 16 ppm	2/22/93	17 Background 10 ppm	26.7	
096	2" Coupling from Detrex Still #14 drain line to DCI #24: coupling "west wall"	2/16/93	46 Background 45-50 ppm	2/19/93	10 Background 16 ppm	2/22/93	36 Background 35 ppm	30.7	

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<u>Tag Numb:</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>e2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Corr</u>	<u>t:</u>
097	2" Union Tank #22 feed line to DCI #24: Union	2/16/93	48 Background 45-50 ppm	2/19/93	16 Background 16 ppm	2/22/93	39 background 35 ppm	34.3		
098	2" Elbow from Detrex Still drain line to DCI #15: Elbow	2/16/93	47 Background 45-50 ppm	2/19/93	14 Background 16 ppm	2/22/93	42 Background 35 ppm	34.3		
099	From Tank #22 at DCI #15	2/16/93	50 Background 45-50 ppm	2/19/93	18 Background 16 ppm	2/22/93	44 Background 35 ppm	37.3		
100	1 1/2" Union and elbow next to valve #99: Union and elbow	2/16/93	49 Background 45-50 ppm	2/19/93	11 Background 16 ppm	2/22/93	43 Background 35 ppm	34.3		
101	1-1/2" at DCI #15 pump inlet: Elbow and tee	2/16/93	50 Background 45-50 ppm	2/18/93	19 Background 15 ppm	2/22/93	42 Background 35 ppm	37.0		
102	Tank #22 isolation valve	2/16/93	50 Background 45-50 ppm	2/18/93	17 Background 15 ppm	2/22/93	36 Background 36 ppm	34.3		
103	1 1/2" from Tank #22 line to isolation valve: Tee	2/16/93	49 Background 45-50 ppm	2/18/93	14 Background 15 ppm	2/22/93	34 BAckground 35 ppm	32.3		
104	1 1/2" near to valve #105: Tee and elbow	2/16/93	51 Background 45-50 ppm	2/18/93	18 Background 15 ppm	2/22/93	38 Background 35 ppm	35.7		

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<u>Tag Numt</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
105	DCI #15 valve	2/16/93	58	2/18/93	18	2/22/93	44	40.0	
		Background 45-50 ppm		Background 15 ppm		Background 35 ppm			
106	1 1/2" after valve #102: Union and Tee	2/16/93	52	2/18/93	22	2/22/93	46	40.0	
		Background 45-50 ppm		Background 15 ppm		Background 35 ppm			
107	1 1/2" at DCI #15 feed back pump: Tee	2/16/93	56	2/18/93	28	2/22/93	49	44.3	
		Background 45-50 ppm		Background 15 ppm		Background 35 ppm			
108	1/2" on feed pump recirculation line union	2/16/93	54	2/18/93	24	2/22/93	52	43.3	
		Background 45-50 ppm		Background 15 ppm		Background 35 ppm			
109	At DCI #15 recirculation valve	2/17/93	28	2/18/93	22	2/22/93	54	34.7	
		Background 25-30 ppm		Background 15 ppm		Background 35 ppm			
110	1 1/2" opposite of valve #109: Union and elbow	2/17/93	25	2/18/93	16	2/22/93	51	30.7	
		Background 25-30 ppm		Background 15 ppm		Background 35 ppm			
111	1 1/2" from DCI #15 drain line: Elbow reducing coupling	2/17/93	34	2/18/93	20	2/22/93	56	36.7	
		Background 25-30 ppm		Background 15 ppm		Background 35 ppm			
112	1 1/2" at DCI #15 pump flexible coupling: Union	2/17/93	39	2/18/93	34	2/22/93	70	47.7	
		Background 25-30 ppm		Background 30 ppm		Background 45 ppm			

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>e2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
113	1 1/2" DCI #15 recirculation line: Two elbows	2/17/93	27 Background 25-30 ppm	2/18/93	60 Background 30 ppm	2/22/93	51 Background 45 ppm	46.0	
114	1 1/2" DCI #15 recirculation line at inlet: Union	2/17/93	24 Background 25-30 ppm	2/18/93	44 Background 30 ppm	2/22/93	49 Background 45 ppm	39.0	
115	2" at DCI #15 inlet: Tee and elbow	2/17/93	28 Background 25-30 ppm	2/18/93	50 Background 30 ppm	2/22/93	48 Background 45 ppm	42.0	
116	2" at valve #117: Union	2/17/93	27 Background 25-30 ppm	2/18/93	108 Background 100 ppm	2/22/93	48 Background 45 ppm	61.0	
117	DCI #15 steam valve	2/17/93	31 Background 25-30 ppm	2/18/93	110 Background 100 ppm	2/22/93	49 Background 45 ppm	63.3	
118	1 1/4" DCI #15 pump "wilden M4"	2/17/93	39 Background 25-30 ppm	2/18/93	36 Background 35 ppm	2/22/93	56 Background 45 ppm	43.7	Leaks due to mechanical failure.
119	1 1/2" just before the DCI #15 flexible coupling and elbow	2/17/93	38 Background 25-30 ppm	2/18/93	40 Background 35 ppm	2/22/93	45 Background 45 ppm	26.0	
120	1/2" Tank #12 middle gauge glass: Top elbow	2/18/93	24 Background 25-30 ppm	2/19/93	30 Background 36 ppm	3/18/93	39 Background 30 ppm	31.0	The middle gauge glass needs repair.

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
121	1/2" Tank #12 top gauge glass: bottom valve	2/18/93	22 Background 25-30 ppm	2/19/93	28 Background 36 ppm	3/18/93	36 Background 30 ppm	28.7	The upper gauge glass needs repair.
122	1 1/2" north of valve #124: Elbow	2/16/93	68 Background 25-30 ppm	2/18/93	38 Background 30 ppm	2/22/93	46 Background 40 ppm	50.7	
123	1/2" Tank #12 middle gauge glass: Top valve	2/18/93	24 Background 25-30 ppm	2/18/93	30 Background 30 ppm	3/18/93	43 Background 40 ppm	32.3	The middle gauge glass needs repair.
124	From Tank #12 to DCI #15	2/16/93	62 Background 25-30 ppm	2/18/93	34 Background 30 ppm	2/22/93	44 Background 40 ppm	46.7	
125	1 1/2" pass elbow #122: Reducing coupling	2/16/93	60 Background 25-30 ppm	2/18/93	28 Background 30 ppm	2/22/93	43 Background 40 ppm	43.7	
126	2" from Tank #12 before Tank #22 pump: Tee and elbow	2/16/93	59 Background 55-50 ppm	2/18/93	30 Background 25 ppm	2/22/93	46 Background 44 ppm	45.0	
127	Suction valve Tank #12 Pump	2/16/93	60 Background 55-50 ppm	2/18/93	24 Background 25 ppm	2/22/93	45 Background 44 ppm	43.0	
128	2" from Tank #12 drain line at the west wall: TEE	2/16/93	61 Background 55-50 ppm	2/18/93	28 Background 25 ppm	2/22/93	44 Background 40 ppm	44.3	

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments</u>
129	Tank #12 drain line to DCI #24	2/16/93	59 Background 55-50 ppm	2/18/93	20 Background 25 ppm	2/22/93	41 Background 40 ppm	40.0	
130	South of valve #129 at the west wall	2/16/93	56 Background 55-50 ppm	2/18/93	20 Background 25 ppm	2/22/93	45 Background 40 ppm	40.3	
131	2" south of valve #130: Elbow with cap	2/16/93	59 Background 55-50 ppm	2/18/93	22 Background 25 ppm	2/22/93	43 Background 40 ppm	41.3	
132	2" Tank #12 drain line near the basket strainer: Two elbows	2/16/93	60 Background 55-50 ppm	2/18/93	38 Background 36 ppm	2/22/93	46 Background 35 ppm	48.0	
133	2" Tank #12 drain line before the basket strainer: Union and elbow	2/16/93	63 Background 60-65 ppm	2/18/93	42 Background 36 ppm	2/22/93	41 Background 35 ppm	48.7	
134	2" Drain line located south side of Tank #12	2/16/93	61 Background 60-65 ppm	2/18/93	36 Background 36 ppm	2/22/93	39 Background 35 ppm	45.3	
135	Tank #12 basket strainer in the south side Note: Small amount of liquid & seal - Check seal/tighten	2/16/93	110 Background 60-65 ppm	2/18/93	70 Background 36 ppm	2/22/93	66 Background 35 ppm	82.0	
136	Between valve #138 and valve #137	2/16/93	61 Background 60-65 ppm	2/18/93	41 Background 36 ppm	2/22/93	36 Background 35 ppm	46.0	

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>e2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Con it:</u>
137	2" Top ball valve located south of Tank #12 for drain line	2/16/93	62 Background 60-65 ppm	2/18/93	34 Background 36 ppm	2/22/93	38 Background 35 ppm	44.7	
138	2" Bottom ball valve drain line located at the south side of Tank #12	2/16/93	60 Background 60-65 ppm	2/18/93	29 Background 36 ppm	2/22/93	38 Background 35 ppm	42.3	
139	1/2" Tank #12 bottom sample port ball valve	2/16/93	68 Background 60-65 ppm	2/18/93	64 Background 40 ppm	2/22/93	41 Background 35 ppm	57.7	
140	1/2" Tank #12 lower gauge glass: Bottom tee and fitting	2/16/93	64 Background 60-65 ppm	2/18/93	50 Background 40 ppm	2/22/93	39 Background 35 ppm	51.0	
141	1/2" Tank #12 lower gauge glass: Bottom valve Note: Appears to be liquid @ gauge glass seal - check seal	2/16/93	62 Background 60-65 ppm	2/18/93	40 Background 40 ppm	2/22/93	37 Background 35 ppm	46.3	
142	1/2" Tank #12 lower gauge glass: upper gate valve	2/16/93	70 Background 60-65 ppm	2/18/93	22 Background 30 ppm	2/22/93	50 Background 35 ppm	47.3	The lower gauge needs repair.
143	1/2" Tank #12 lower gauge glass: upper fitting	2/16/93	71 Background 60-65 ppm	2/18/93	27 Background 30 ppm	2/22/93	42 Background 35 ppm	46.7	The lower gauge needs repair.
144	1/2" Tank #12 middle gauge glass: sample valve and Tee	2/16/93	72 Background 60-65 ppm	2/18/93	22 Background 30 ppm	2/22/93	39 Background 35 ppm	44.3	The middle gauge glass needs repair.

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
145	1/2" Tank #12 middle gauge glass: Lower elbow and valve	2/16/93	31	2/18/93	19	3/18/93	26	25.3	The middle gauge glass needs repair.
		Background 60-65 ppm		Background 30 ppm		Background 20ppm			
146	2" from Tank #22 to DCI #24: Coupling "located on the west wall behind Tank #12"	2/16/93	63	2/18/93	32	2/22/93	34	43.0	
		Background 60-65 ppm		Background 30 ppm		Background 34 ppm			
147	2" Detrex Still #14 drain line to DCI #24: Coupling	2/16/93	61	2/18/93	29	2/22/93	35	41.7	
		Background 60-65 ppm		Background 30 ppm		Background 34 ppm			
148	1/2" Tank #12 upper gauge glass: Lower elbow	2/18/93	36	2/19/93	24	3/18/93	33	31.0	The upper gauge glass needs repair.
		Background 60-65 ppm		Background 35ppm		Background 20 ppm			
149	1/2" Tank #12 upper gauge glass: sample valve and Tee	2/18/93	41	2/19/93	21	3/18/93	33	31.7	The upper gauge glass needs repair.
		Background 60-65 ppm		Background 35 ppm		Background 20 ppm			
150	1/2" Tank #12 upper gauge glass: lower coupling	2/18/93	31	2/19/93	22	3/18/93	36	29.7	The upper gauge glass needs repair.
		Background 60-65 ppm		Background 35 ppm		Background 20 ppm			
151	1/2" Tank #12 upper gauge glass: upper valve and elbow	2/18/93	16	2/19/93	39	3/18/93	34	29.7	The upper gauge glass needs repair.
		Background 60-65 ppm		Background 35 ppm		Background 20 ppm			
152	2" from Tank #22 drain line located on the west wall near DCI #24: Union	2/16/93	68	2/18/93	24	2/22/93	34	42.0	
		Background 60-65 ppm		Background 20 ppm		Background 33 ppm			

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments</u>
145	1/2" Tank #12 middle gauge glass: Lower elbow and valve	2/16/93	31 Background 60-65 ppm	2/18/93	19 Background 30 ppm	3/18/93	26 Background 20ppm	25.3	The middle gauge glass needs repair.
146	2" from Tank #22 to DCI #24: Coupling "located on the west wall behind Tank #12"	2/16/93	63 Background 60-65 ppm	2/18/93	32 Background 30 ppm	2/22/93	34 Background 34 ppm	43.0	
147	2" Detrex Still #14 drain line to DCI #24: Coupling	2/16/93	61 Background 60-65 ppm	2/18/93	29 Background 30 ppm	2/22/93	35 Background 34 ppm	41.7	
148	1/2" Tank #12 upper gauge glass: Lower elbow	2/18/93	36 Background 60-65 ppm	2/19/93	24 Background 35ppm	3/18/93	33 Background 20 ppm	31.0	The upper gauge glass needs repair.
149	1/2" Tank #12 upper gauge glass: sample valve and Tee	2/18/93	41 Background 60-65 ppm	2/19/93	21 Background 35 ppm	3/18/93	33 Background 20 ppm	31.7	The upper gauge glass needs repair.
150	1/2" Tank #12 upper gauge glass: lower coupling	2/18/93	31 Background 60-65 ppm	2/19/93	22 Background 35 ppm	3/18/93	36 Background 20 ppm	29.7	The upper gauge glass needs repair.
151	1/2" Tank #12 upper gauge glass: upper valve and elbow	2/18/93	16 Background 60-65 ppm	2/19/93	39 Background 35 ppm	3/18/93	34 Background 20 ppm	29.7	The upper gauge glass needs repair.
152	2" from Tank #22 drain line located on the west wall near DCI #24: Union	2/16/93	68 Background 60-65 ppm	2/18/93	24 Background 20 ppm	2/22/93	34 Background 33 ppm	42.0	

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments</u>
153	2" from Detrex Still #14 drain line located on the west wall Union?	2/16/93	64 Background 60-65 ppm	2/18/93	23 Background 20 ppm	2/22/93	36 Background 33 ppm	41.0	
154	2" from Detrex Still #14 drain line on the west wall	2/16/93	61 Background 60-65 ppm	2/18/93	21 Background 20 ppm	2/22/93	36 Background 33 ppm	39.3	
155	From Detrex Still drain line on the west wall, behind DCI #24	2/16/93	62 Background 60-65 ppm	2/18/93	20 Background 20 ppm	2/22/93	34 Background 33 ppm	38.7	
156	End of the line from Tank #22 to DCI #24	2/16/93	61 Background 60-65 ppm	2/18/93	20 Background 20 ppm	2/22/93	35 Background 33 ppm	38.7	
157	End of the bottom line from Detrex Still #14 drain line to DCI #24	2/16/93	60 Background 60-65 ppm	2/18/93	20 Background 20 ppm	2/22/93	33 Background 33 ppm	37.7	
158	2" DCI #24 manifold: Two tees and elbow	2/17/93	12 Background 12 ppm	2/18/93	19 Background 20 ppm	2/22/93	32 Background 33 ppm	21.0	
159	2" from DCI #24 drain line on the west wall: Elbow and union.	2/17/93	16 Background 12 ppm	2/18/93	18 Background 20 ppm	2/22/93	36 Background 33 ppm	23.3	
160	Out of the DCI #24 pump	2/17/93	22 Background 12 ppm	2/18/93	24 Background 15 ppm	2/22/93	35 Background 30 ppm	27.0	

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<u>Tag Numb:</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Coment:</u>
161	1 1/2" DCI #24 pump line: Tee and union	2/17/93	22	2/18/93	20	2/22/93	32	24.7	
		Background 12 ppm		Background 15 ppm		Background 30 ppm			
162	1 1/2" DCI #24 pump line: Union	2/17/93	12	2/18/93	18	2/22/93	38	22.7	
		Background 12 ppm		Background 15 ppm		Background 30 ppm			
163	DCI #24 recirculation valve	2/17/93	8	2/18/93	17	2/22/93	37	20.7	
		Background 8-10 ppm		Background 15 ppm		Background 30 ppm			
164	1 1/2" DCI #24 recirculation line: Union	2/17/93	8	2/18/93	20	2/22/93	39	22.3	
		Background 8-10 ppm		Background 15 ppm		Background 30 ppm			
165	1 1/2" DCI #24 drain outlet: Two elbows	2/17/93	16	2/18/93	21	2/22/93	39	25.3	
		Background 8-10 ppm		Background 15 ppm		Background 30 ppm			
166	1 1/2" DCI #24 drain outlet line: elbow	2/17/93	34	2/18/93	23	2/22/93	41	32.7	
		Background 8-10 ppm		Background 15 ppm		Background 30 ppm			
167	DCI #24 pump	2/17/93	18	2/18/93	19	2/22/93	40	25.7	
		Background 8-10 ppm		Background 15 ppm		Background 30 ppm			
168	1 1/2" DCI #24 pump line: Elbow and union	2/17/93	24	2/18/93	16	2/22/93	38	26.0	
		Background 8-10 ppm		Background 15 ppm		Background 30 ppm			

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<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments</u>
169	DCI #24 Feed inlet flange	2/17/93	20 Background 8-10 ppm	2/18/93	110 Background 100 ppm	2/22/93	39 Background 30 ppm	56.3	
170	1 1/2" tee and 2" reducing coupling out of the DCI #24 feed inlet flange	2/17/93	24 Background 8-10 ppm	2/18/93	111 Background 100 ppm	2/22/93	40 Background 30 ppm	58.3	
171	2" DCI #24 feed inlet line: Two tees	2/17/93	30 Background 8-10 ppm	2/18/93	110 Background 100 ppm	2/22/93	39 Background 36 ppm	59.7	
172	2" east of valve #173: union and elbow	2/17/93	28 Background 8-10 ppm	2/18/93	112 Background 100 ppm	2/22/93	38 Background 36 ppm	59.3	
173	Near the feed inlet flange DCI #24 Feed steam valve	2/17/93	26 Background 8-10 ppm	2/18/93	111 Background 100 ppm	2/22/93	42 Background 36 ppm	59.7	
174	DCI #24 drain valve	2/17/93	28 Background 18-20 ppm	2/18/93	55 Background 45 ppm	2/22/93	32 Background 30 ppm	38.3	
175	4" DCI #24 cleanout tee	2/17/93	22 Background 18-20 ppm	2/18/93	50 Background 45 ppm	2/22/93	30 Background 30 ppm	34.0	
176	DCI #24 drain pump & outlet	2/17/93	19/20 Background 18-20 ppm	2/18/93	54 Background 45 ppm	2/22/93	34 Background 30 ppm	669.3	

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Con</u>	<u>dt</u>
177	DCI #24 drain sample port valve	2/17/93	18 Background 18-20 ppm	2/18/93	39	2/22/93	35 Background 30 ppm	30.7		
178	DCI #15 feed inlet flange (Put in list with 113 & 114)	2/17/93	22 Background 18-20 ppm	2/19/93	38 Background 16 ppm	2/22/93	30 Background 30 ppm	30.0		
179	1 1/4" DCI #24 drain line sample port: Tee and reducing coupling	2/17/93	17 Background 18-20 ppm	2/19/93	14 Background 16 ppm	2/23/93	24 Background 22 ppm	18.3		
180	2" DCI #24 drain line sample port: Union	2/17/93	19 Background 18-20 ppm	2/19/93	16 Background 16 ppm	2/23/93	26 Background 22 ppm	20.3		
181	2" DCI #24 drain line sample port pressure gauge	2/17/93	20 Background 18-20 ppm	2/19/93	22 Background 16 ppm	2/23/93	27 Background 22 ppm	23.0		
182	2" DCI #24 drain line sample port: Top elbow	2/17/93	17 Background 18-20 ppm	2/19/93	22 Background 16 ppm	2/23/93	20 Background 22 ppm	19.7		
183	DCI #24 drain valve sample port to Tank	2/17/93	18 Background 18-20 ppm	2/19/93	20 Background 16 ppm	2/23/93	26 Background 22 ppm	21.3		
184	2" DCI #24 drain line above valve #183: Tee	2/17/93	18 Background 18-20 ppm	2/19/93	18 Background 16 ppm	2/23/93	24 Background 25 ppm	20.0		

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Cor</u>	<u>At:</u>
185	2" from DCI #24 drain line sample port to tank #17: Elbow "located west of valve #183"	2/17/93	14 Background 18-20 ppm	2/19/93	18 Background 16 ppm	2/23/93	29 Background 25 ppm	20.3		
186	2" from DCI #24 drain line sample port to tank #17: Elbow "located directly above Tank #17.	2/17/93	20 Background 18-20 ppm	2/19/93	17 Background 16 ppm	2/23/93	28 Background 25 ppm	21.7		
187	2" from DCI #24 drain line sample port to Tank #17: Union "above Tank #17"	2/17/93	15 Background 18-20 ppm	2/18/93	39 Background 35 ppm	2/23/93	29 Background 25 ppm	27.7		
188	Tank #17 manway cover flange	2/17/93	20 Background 18-20 ppm	2/18/93	28 Background 35 ppm	2/23/93	30 Background 25 ppm	26.0		
189	3" Tank #17 manway cover line: Tee and reducing coupling	2/17/93	24 Background 18-20 ppm	2/18/93	36 Background 35 ppm	2/23/93	31 Background 25 ppm	30.3		
190	2" vent pipe union above Tank #17	2/17/93	18 Background 18-20 ppm	2/18/93	33 Background 35 ppm	2/23/93	29 Background 25 ppm	26.7		
191	2" processing pipe to Tank #17: Union	2/17/93	17 Background 18-20 ppm	2/18/93	38 Background 35 ppm	2/23/93	34 Background 25 ppm	29.7		
192	2" processing pipe to Tank #17: Elbow	2/17/93	30 Background 18-20 ppm	2/18/93	32 Background 35 ppm	2/23/93	32 Background 25 ppm	31.3		

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<u>Tag Numb:</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>#2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Con it:</u>
193	From top of Tank #17 to Liquitote system	2/16/93	94	2/18/93	32	2/23/93	30	52.0	
		Background 70-80 ppm		Background 35 ppm		Background 25 ppm			
194	2" top Tank #17 to Liquitote: Elbow	2/16/93	84	2/18/93	34	2/23/93	29	49.0	
		Background 70-80 ppm		Background 35 ppm		Background 25 ppm			
195	2" Tank #17 above the pump: manifold elbow	2/16/93	66	2/18/93	25	2/23/93	30	40.3	
		Background 70-80 ppm		Background 35 ppm		Background 25 ppm			
196	3" from Tank #17 to the tan truck loading line: manifold elbow above pump #17	2/17/93	22	2/18/93	25	2/23/93	31	26.0	
		Background 70-80 ppm		Background 35 ppm		Background 25 ppm			
197	3" from Tank #17 pump to tank truck loading line: elbow	2/17/93	26	2/18/93	28	2/23/93	29	27.7	
		Background 70-80 ppm		Background 35 ppm		Background 25 ppm			
198	3" from Tank #17 pump to truck load line: coupling	2/17/93	24	2/18/93	24	2/23/93	27	25.0	
		Background 70-80 ppm		Background 35 ppm		Background 25 ppm			
199	3" from Tank #17 pump to truck load line: coupling	2/17/93	18	2/18/93	25	2/23/93	22	21.7	
		Background 70-80 ppm		Background 35 ppm		Background 25 ppm			
200	3" from Tank #17 pump to truck load line east of Tag #199: coupling	2/17/93	20	2/18/93	22	2/26/93	30	24.0	
		Background 8-15 ppm		Background 16 ppm		Background 20 ppm			

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<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Corr</u>	<u>1:</u>
201	3" truck load line east of tag #200: Tee Note: Leak at W. side of tee - tighten	2/17/93	60 Background 8-15 ppm	2/18/93	18 Background 16 ppm	2/26/93	49 Background 20 ppm	42.3		Leaks due to mechanical failure.
202	3" truck load line east of Tag #201: Elbow	2/17/93	30 Background 8-15 ppm	2/18/93	24 Background 16 ppm	2/26/93	31 Background 20 ppm	28.3		
203	3" truck load line north of Tag #202: Elbow	2/17/93	32 Background 8-15 ppm	2/18/93	26 Background 16 ppm	2/26/93	29 Background 20 ppm	29.0		
204	3" truck load line directly below Tag #203: Elbow	2/17/93	32 Background 8-15 ppm	2/18/93	20 Background 16 ppm	2/26/93	28 Background 20 ppm	26.7		
205	Truck load valve from Tank #17 located in the east wall.	2/17/93	22 Background 8-15 ppm	2/18/93	18 Background 16 ppm	2/26/93	24 Background 20 ppm	21.3		
206	3" truck load line from Tank #17 located below valve #205: Union	2/17/93	24 Background 8-15 ppm	2/18/93	14 Background 16 ppm	2/26/93	18 Background 20 ppm	18.7		
207	3" truck load line from Tank #17 located on the east wall: two elbows	2/17/93	25 Background 8-15 ppm	2/18/93	11 Background 16 ppm	2/26/93	19 Background 20 ppm	18.3		
208	3" truck load line from Tank #17 located on the outside east wall: coupling	2/17/93	18 Background 15-20 ppm	2/18/93	10 Background 16 ppm	2/26/93	17 Background 20 ppm	15.0		

Operator _____

Supervisor _____

<u>Tag Numb</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments:</u>
217	3" out of Tank #17 pump to the truck load line: Tee	2/16/93	67 Background 50-55 ppm	2/18/93	20 Background 16 ppm	2/23/93	30 Background 22 ppm	39.0	
218	Tank #17 air purge	2/16/93	66 Background 50-55 ppm	2/18/93	19 Background 16 ppm	2/23/93	29 Background 22 ppm	38.0	
219	1/2" south of valve #218: Tee	2/16/93	63 Background 50-55 ppm	2/18/93	17 Background 16 ppm	2/23/93	29 Background 22 ppm	36.3	
220	Tank #17 sample valve	2/16/93	64 Background 50-55 ppm	2/18/93	14 Background 16 ppm	2/23/93	30 Background 22 ppm	36.0	
221	2" Union Tank #17 pump line to tote tank fill line, located below valve #224: Union	2/16/93	70 Background 50-55 ppm	2/18/93	14 Background 16 ppm	2/23/93	30 Background 22 ppm	38.0	
222	2" Union Tank #17 pump line to rail line, located below valve #225: Union	2/16/93	64 Background 50-55 ppm	2/18/93	16 Background 16 ppm	2/23/93	29 Background 22 ppm	36.3	
223	3" Union Tank #17 pump line to truck load line, located below valve #226: Union	2/16/93	62 Background 50-55 ppm	2/18/93	20 Background 16 ppm	2/23/93	31 Background 22 ppm	37.7	
224	For the tote tank fill from Tank #17	2/16/93	66 Background 50-55 ppm	2/18/93	21 Background 20 ppm	2/23/93	32 Background 30 ppm	39.7	

Operator _____

Supervisor _____

<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comments:</u>
225	For the rail line from Tank #17	2/16/93	69 Background 50-55 ppm	2/18/93	28 Background 20 ppm	2/23/93	31 Background 30 ppm	42.7	
226	For the truck load line from Tank #17	2/16/93	54 Background 50-55 ppm	2/18/93	24 Background 20 ppm	2/23/93	31 Background 30 ppm	36.3	
227	2" Tank #17 drum filling line: Elbow	2/16/93	58 Background 50-55 ppm	2/18/93	19 Background 20 ppm	2/22/93	20 Background 20 ppm	32.3	
228	Tank #17 drum filling valve	2/16/93	58 Background 50-55 ppm	2/18/93	14 Background 20 ppm	2/22/93	21 Background 20 ppm	31.0	
229	1/2" Tank #17 lower gauge glass: Tee	2/16/93	55 Background 50-55 ppm	2/18/93	18 Background 20 ppm	2/22/93	19 Background 20 ppm	30.7	
230	Tank #17 bottom gauge glass	2/16/93	60 Background 50-55 ppm	2/18/93	24 Background 20 ppm	2/22/93	18 Background 20 ppm	34.0	
231	Tank #17 top gauge glass	2/16/93	58 Background 50-55 ppm	2/18/93	11 Background 20 ppm	2/22/93	16 Background 20 ppm	28.3	
232	1/2" Tank #17 top gauge glass: Tee	2/16/93	59 Background 50-55 ppm	2/19/93	13 Background 20 ppm	2/22/93	17 Background 20 ppm	29.7	

Operator _____

Supervisor _____

<u>Tag Numbe</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>#2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
233	DCI #15 drain valve	2/17/93	33	2/18/93	31	2/22/93	42	35.3	
		Background 30 ppm		Background 28 ppm		Background 40 ppm			
234	3" to DCI #15 pump: Union	2/17/9	26	2/18/93	35	2/22/93	49	36.7	
		Background 30 ppm		Background 28 ppm		Background 40 ppm			
235	DCI #15 pump	2/17/93	27	2/18/93	36	2/22/93	70	44.3	
		Background 30 ppm		Background 28 ppm		Background 40 ppm			Leaks due to mechanical failure.
236	2" out of DCI #15 pump: Elbow	2/17/93	44	2/18/93	38	2/22/93	59	47.0	
		Background 30 ppm		Background 28 ppm		Background 40 ppm			
237	2" out of DCI #15 pump drain line: Elbow	2/17/93	37	2/18/93	32	2/22/93	50	39.7	
		Background 30 ppm		Background 28 ppm		Background 40 ppm			
238	2" drain line south of valve #239: Two tees and pressure gauge	2/17/93	28	2/18/93	30	2/22/93	34	30.7	
		Background 20-25 ppm		Background 26 ppm		Background 40 ppm			
239	DCI #15 drain line	2/17/93	29	2/18/93	28	2/22/93	40	32.3	
		Background 20-25 ppm		Background 26 ppm		Background 40 ppm			
240	2" DCI #15 drain line north side tank: Two elbows and one union	2/17/93	30	2/18/93	32	2/22/93	50	37.3	
		Background 20-25 ppm		Background 26 ppm		Background 40 ppm			

Operator

Supervisor

<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
241	DCI #15 manway	2/17/93	28 Background 20-25 ppm	2/18/93	34 Background 26 ppm	2/22/93	48 Background 40 ppm	36.7	
242	2" DCI #15 overhead cleanout Tee #1	2/17/93	29 Background 20-25 ppm	2/18/93	70 Background 26 ppm	2/22/93	49 Background 40 ppm	49.3	
243	2" DCI #15 overhead cleanout Tee #2	2/17/93	26 Background 20-25 ppm	2/18/93	80 Background 26 ppm	2/22/93	52 Background 40 ppm	52.7	
244	2" from DCI #15 drain line: overheadcoupling #1	2/17/93	10 Background 10 ppm	2/18/93	26 Background 25 ppm	2/22/93	26 Background 40 ppm	20.7	
245	2" coupling from DCI #15 drain line to Tank #17: overhead coupling #2	2/17/93	29 Background 10 ppm	2/18/93	26 Background 25 ppm	2/22/93	19 Background 12 ppm	24.7	
246	2" from DCI #15 drain line to Tank #17: overhead coupling #	2/17/93	28 Background 10 ppm	2/18/93	29 Background 25 ppm	2/22/93	21 Background 12 ppm	26.0	
247	2" from DCI #15 drain line: overhead Elbow #1	2/17/93	32 Background 30 ppm	2/18/93	28 Background 25 ppm	2/22/93	19 Background 12 ppm	26.3	
248	2" from DCI #15 drain line: Overhead Two elbows	2/17/93	30 Background 30 ppm	2/18/93	28 Background 25 ppm	2/22/93	11 Background 12 ppm	23.0	

Operator

Supervisor

<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
249	2" from DCI #15 drain line: Overhead Union #1	2/17/93	30 Background 30 ppm	2/18/93	28 Background 25 ppm	2/22/93	13 Background 12 ppm	23.7	
250	2" from DCI #15 drain line located east wall: Overhead Tee and elbow	2/17/93	30 Background 30 ppm	2/18/93	26 Background 25 ppm	2/22/93	12 Background 12 ppm	22.7	
251	DCI #15 drain line to Tank #17 located on the east wall	2/17/93	31 Background 8-15 ppm	2/19/93	26 Background 20 ppm	2/26/93	14 Background 11 ppm	23.7	
252	2" from DCI #15 drain line west of valve #251: Union #2	2/17/93	34 Background 8-15 ppm	2/19/93	24 Background 20 ppm	2/26/93	13 Background 11 ppm	23.7	
253	From DCI #15 drain line east wall located north of valve #251	2/17/93	31 Background 8-15 ppm	2/18/93	12 Background 20 ppm	2/26/93	16 Background 11 ppm	19.7	
254	2" from DCI #15 drain line located above the east side of Tank #17: overhead coupling	2/17/93	20 Background 8-15 ppm	2/18/93	26 Background 20 ppm	2/26/93	11 Background 11 ppm	19.0	
255	Tank #12 pump located near the west wall Note: Pump seal dripped when pump was turned on. tighten seal	2/17/93	1700 Background 7 ppm	2/18/93	1100 Background 40 ppm	2/22/93	900 Background 45 ppm	?	Leaks due to mechanical failure.
256	Tank #12 pump outlet	2/17/93	170 Background 90-180 ppm	2/18/93	50 Background 40 ppm	2/22/93	50 Background 45 ppm	90.0	

Operator _____

Supervisor _____

<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
257	1 1/4" Tank #12 discharge line: Tee, union and elbow	2/17/93	90 Background 90-180 ppm	2/18/93	39 Background 40 ppm	2/22/93	42 Background 45 ppm	57.0	
258	Tank #12 discharge line to Detrex Still #14	2/17/93	50 Background 40-80 ppm	2/18/93	40 Background 40 ppm	2/22/93	38 Background 45 ppm	42.7	
259	Tank #12 discharge line to Detrex Still #13	2/17/93	43 Background 40-80 ppm	2/18/93	44 Background 40 ppm	2/22/93	40 Background 45 ppm	42.3	
260	1 1/4" from Tank #12 discharge line to Detrex Still #13, located northwest of valve #259: Elbow	2/17/93	40 Background 40-80 ppm	2/18/93	40 Background 40 ppm	2/22/93	28 Background 45 ppm	36.0	
261	1 1/4" from Tank #12 discharge line to Detrex Still #13: coupling	2/17/93	33 Background 40-80 ppm	2/18/93	50 Background 40 ppm	2/22/93	35 Background 45 ppm	39.3	
262	1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead elbow #1	2/17/93	28 Background 10 ppm	2/19/93	16 Background 15 ppm	2/26/93	18 Background 14 ppm	20.7	
263	1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead elbow #2	2/17/93	20 Background 10 ppm	2/19/93	18 Background 15 ppm	2/26/93	19 Background 14 ppm	19.0	
264	1 1/4" from Tank #12 discharge line to Detrex Still #14: overhead elbow #1	2/17/93	17 Background 10 ppm	2/19/93	13 Background 15 ppm	2/26/93	14 Background 14 ppm	14.7	

Operator

Supervisor

<u>Tag Number</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1 (ppm)</u>	<u>Date2</u>	<u>Reading2 (ppm)</u>	<u>Date3</u>	<u>Reading3 (ppm)</u>	<u>Average Reading</u>	<u>Comment:</u>
265	1 1/4" from Tank #12 discharge line to Detrex Still #14: overhead coupling	2/17/93 Background 10 ppm	12	2/19/93 Background 15 ppm	22	2/26/93 Background 14 ppm	16	16.7	
266	1 1/4" from Tank #12 discharge line to Detrex Still #14: overhead elbow #2	2/17/93 Background 10 ppm	13	2/19/93 Background 15 ppm	24	2/26/93 Background 14 ppm	22	19.7	
267	1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead coupling	2/17/93 Background 10 ppm	10	2/19/93 Background 20 ppm	26	2/26/93 Background 20 ppm	24	20.0	
268	1 1/4" from Tank #12 discharge line to Detrex Still #13: overhead elbow and coupling	2/17/93 Background 10 ppm	14	2/19/93 Background 20 ppm	25	2/26/93 Background 20 ppm	23	20.7	
269	1 1/4" from Tank #12 discharge line to Detrex Still #13: Union	2/17/93 Background 10 ppm	15	2/19/93 Background 20 ppm	23	2/26/93 Background 20 ppm	23	20.3	
270	Discharge line at Detrex Still #13	2/17/93 Background 10 ppm	16	2/19/93 Background 20 ppm	24	2/26/93 Background 20 ppm	29	23.0	
271	1 1/4" at the end inlet Detrex Still #13: Elbow and tee fitting	2/17/93 Background 10 ppm	20	2/19/93 Background 20 ppm	24	2/26/93 Background 20 ppm	22	22.0	
272	At the end inlet of Detrex Still #13	2/17/93 Background 10 ppm	19	2/19/93 Background 20 ppm	26	2/26/93 Background 20 ppm	24	23.0	

Operator _____

Supervisor _____

<u>Tag</u> <u>Numbe</u>	<u>Location Description</u>	<u>Date1</u>	<u>Reading1</u> (ppm)	<u>Date2</u>	<u>Reading2</u> (ppm)	<u>Date3</u>	<u>Reading3</u> (ppm)	<u>Average</u> <u>Reading</u>	<u>Comment:</u>
273	1" at Detrex Still #13 fill line from Tank #22: union	2/17/93	18 Background 10 ppm	2/19/93	24 Background 20 ppm	2/22/93	22 Background 20 ppm	21.3	
274	Tank #22 manway cover	2/17/93	15 Background 10 ppm	2/18/93	20 Background 20 ppm	2/22/93	25 Background 20 ppm	20.0	
275	Tank #22 manway cover	2/17/93	20 Background 10 ppm	2/18/93	18 Background 20 ppm	2/26/93	29 Background 20 ppm	22.3	
276	1" toyto valve at Lower gauge glass at Tank #22	2/17/93	16 Background 10 ppm	2/18/93	20 Background 20 ppm	2/26/93	29 Background 20 ppm	21.7	
277	1" Tank #22 lower gauge glass: Tee	2/17/93	15 Background 10 ppm	2/18/93	21 Background 20 ppm	2/26/93	26 Background 20 ppm	20.7	
278	1" toyto valve at upper gauge glass at tank # 22	2/17/93	12 Background 10 ppm	2/18/93	18 Background 20 ppm	2/26/93	26 Background 20 ppm	18.7	
279	1" at Tank #22 upper gauge glass: union	2/17/93	16 Background 10 ppm	2/18/93	40 Background 20 ppm	2/26/93	28 Background 20 ppm	28.0	
280	1/2" at Tank #22 lower gauge glass: upper elbow	2/17/93	9 Background 10 ppm	2/18/93	28 Background 20 ppm	2/26/93	24 Background 20 ppm	20.3	

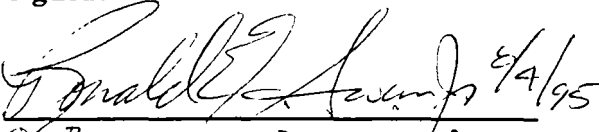
Operator _____

Supervisor _____

Equipment Subject to the Standard Certification Statement

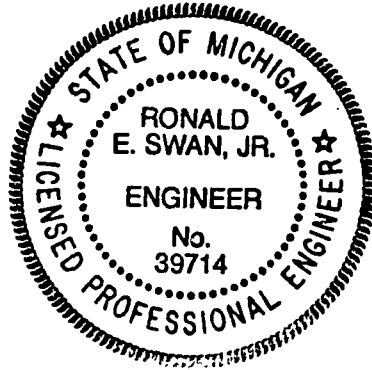
I certify, under penalty of law, that equipment operated by Detrex Corporation in the process of treating hazardous waste liquids at the Detroit facility are operated in Light Liquid service, with the exception of Perchloroethylene waste. Since the equipment is not segregated such that Perchloroethylene waste is processed in segregated equipment, Detrex believes that all equipment is operated in light liquid service and hence subject to the standard.

Signed:


ON BEHALF OF DETREX CORP.

Ronald E. Swan, Jr. - CHMM, PE

Detrex Corporation



V C 3a

All reference sources to document and demonstrate compliance include the following:

1. AA-BB Compliance Response List of Informational References and Sources (Section 2).
2. Emission Estimate Calculations, R.E. Swan - Detrex Corporation, 3/8/89.
3. Solvent Vapor Recovery Modules, Detrex Corporation, 8-86.
4. Detrex Solvent Vapor Recovery Module Design, Detrex Corporation, 1989.

V C 3b

Records and dates of Compliance Tests are provided for 40 CFR 264 Subpart BB in Section 4. Additionally, original equipment calibration and operational continuous monitoring data (strip charts) are included in Section 5, attached.

V C 3c

Design analysis, Specifications, drawings, schematics and P & ID's are provided in Section 2.

Calibration & Operational Strip Charts

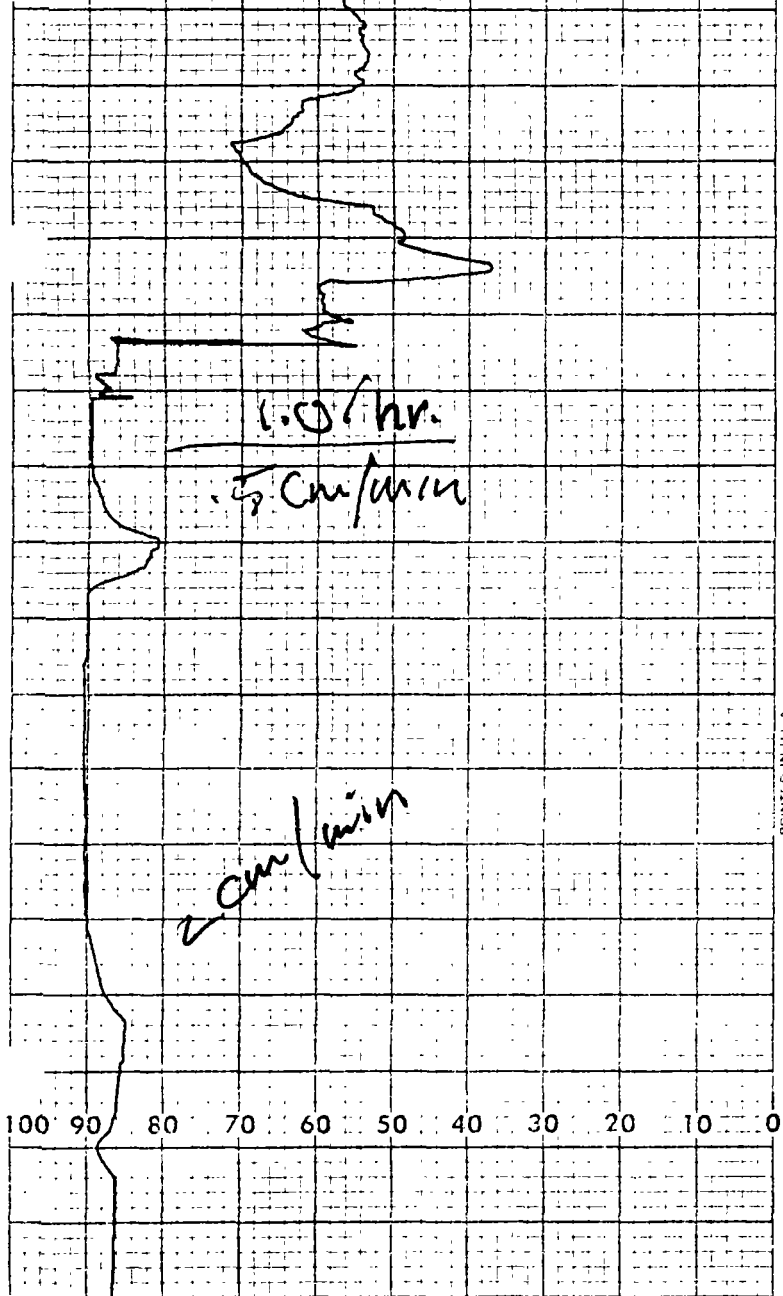
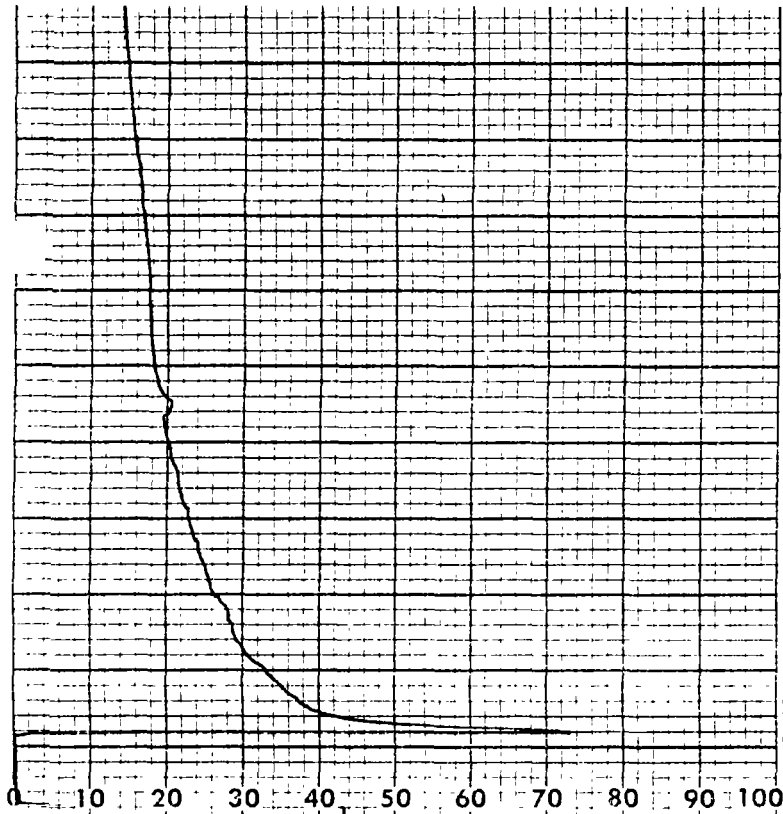
6/24/92

See 1-0001
1.0 cm/V

PRINTED IN U.S.A.

100 90 80 70 60 50 40 30 20 10 0

5 LIC-0100-0011



CALIBRATION

0 10 20 30 40 50 60 70 80 90 100

CHART NO. LIC 0100-0011

CALIBRATION

6-23-92 UNIT TEST

830

6-1-92

830 6-1-92
100 90 80 70 60 50 40 30 20 10 0

800 5-29-92
MAY 28, 92
CHART NO. LIC-0100-0011

0 10 20 30 40 50 60 70 80 90 100
640 5-27-92
PRINTED IN U.S.A.

700

5-26-92

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CHART NO LIC-0100-0011

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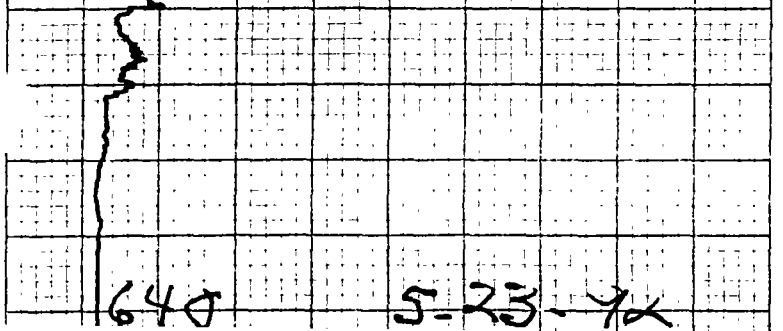
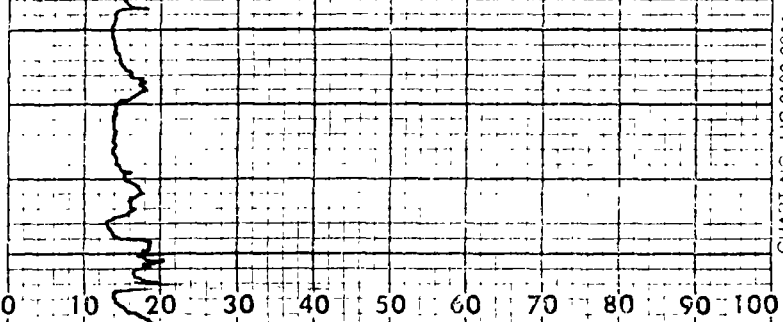
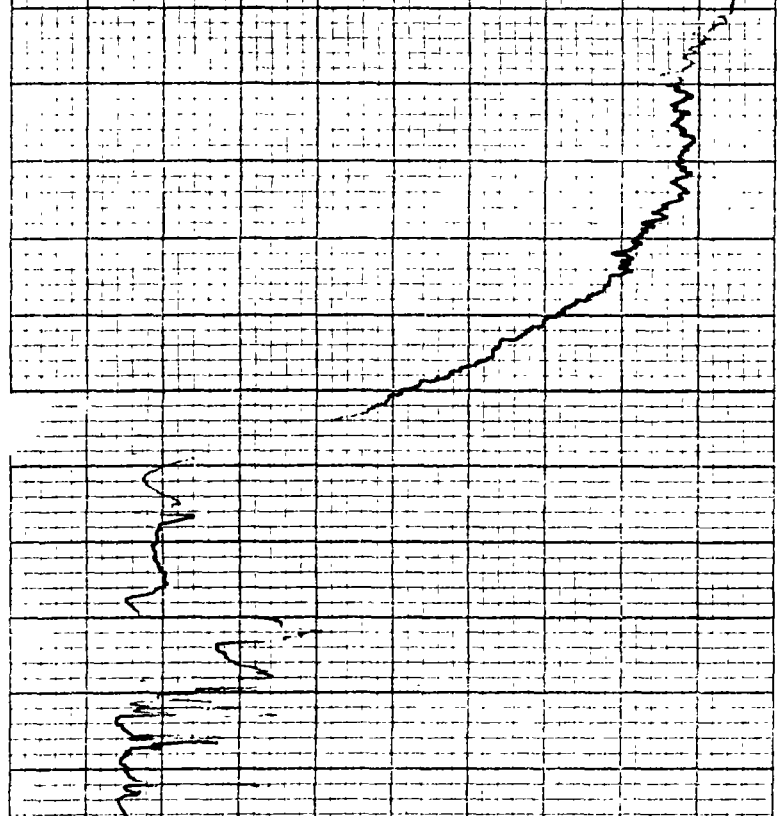
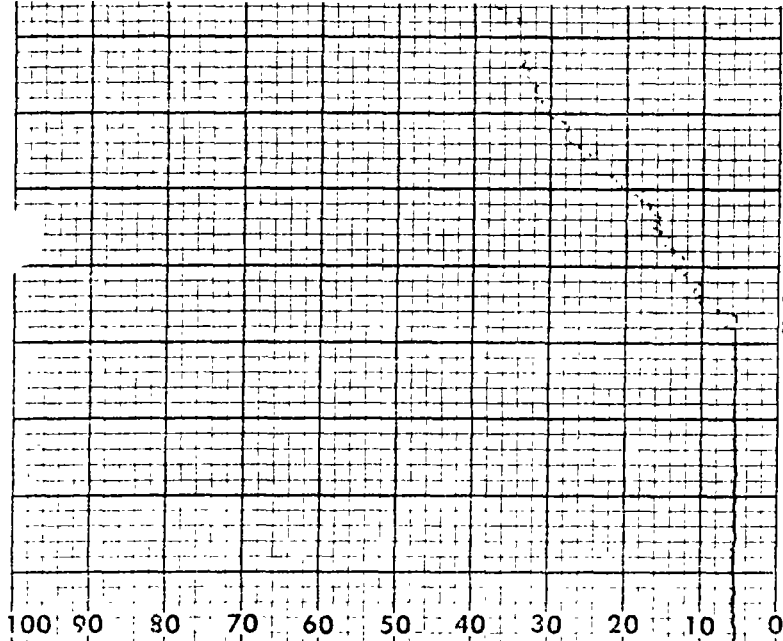


CHART NO LIC-0100-0011

640

5-23-70

640

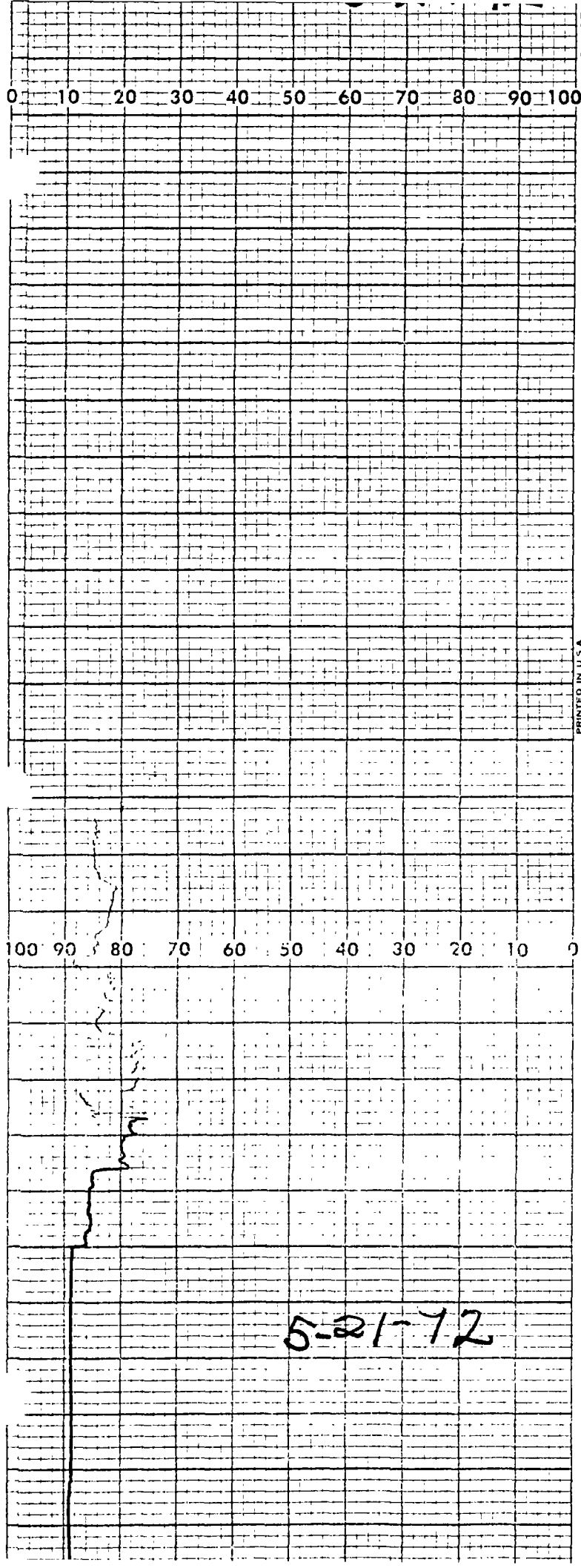
5-23-92

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90 80 70 60 50 40 30 20 10 0

1.0 cm/Hr
5-22-92

RT NO LIC-0100-0011



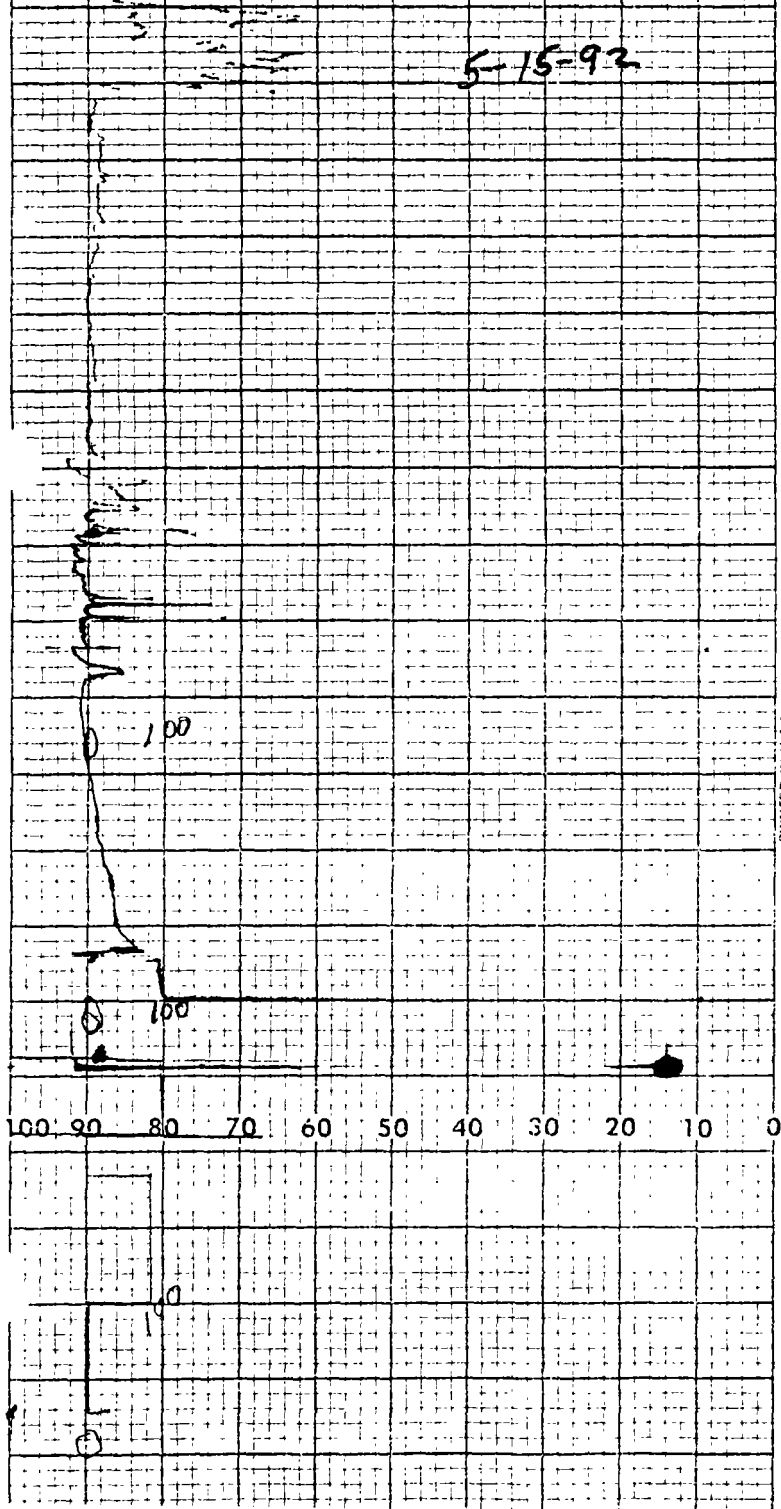
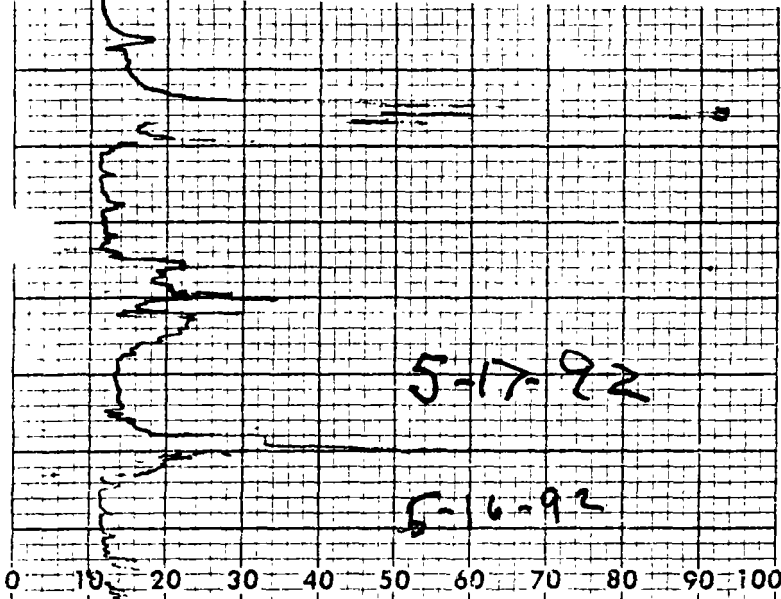
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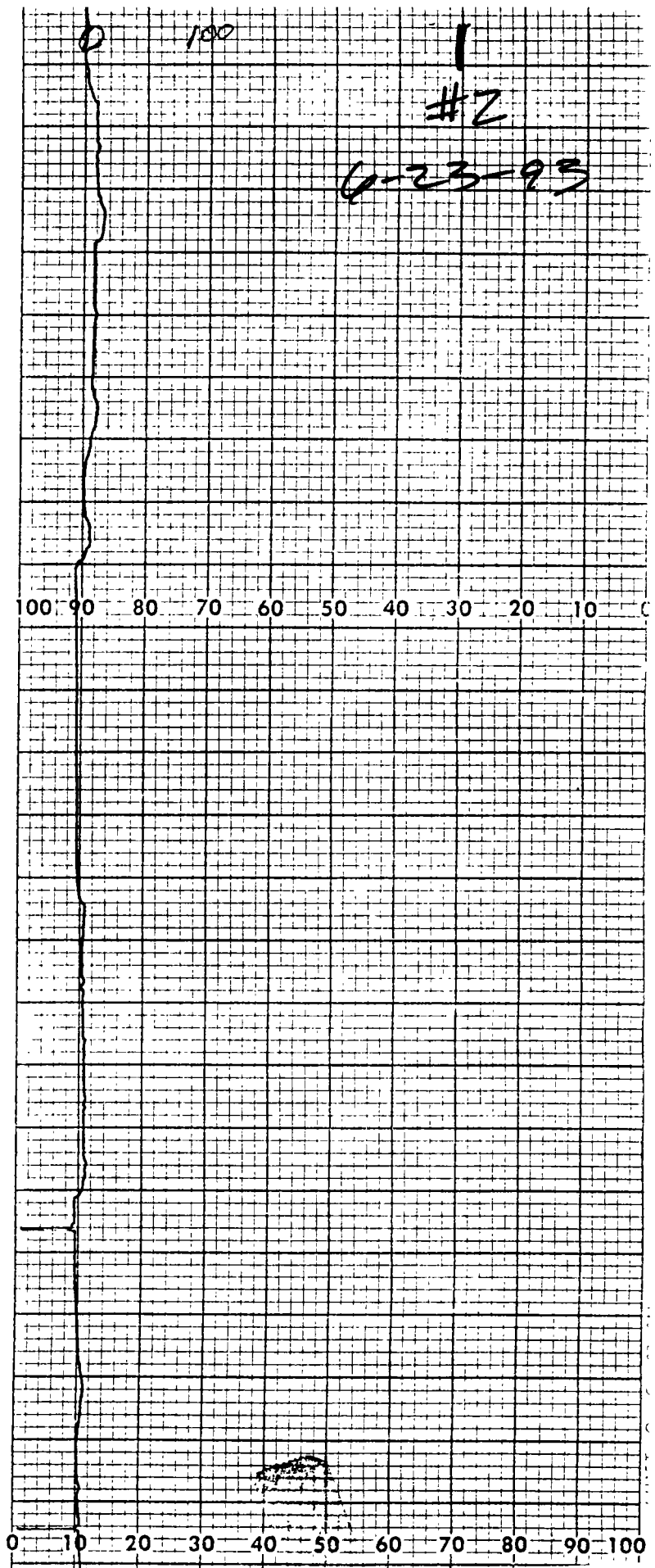
5-20-92

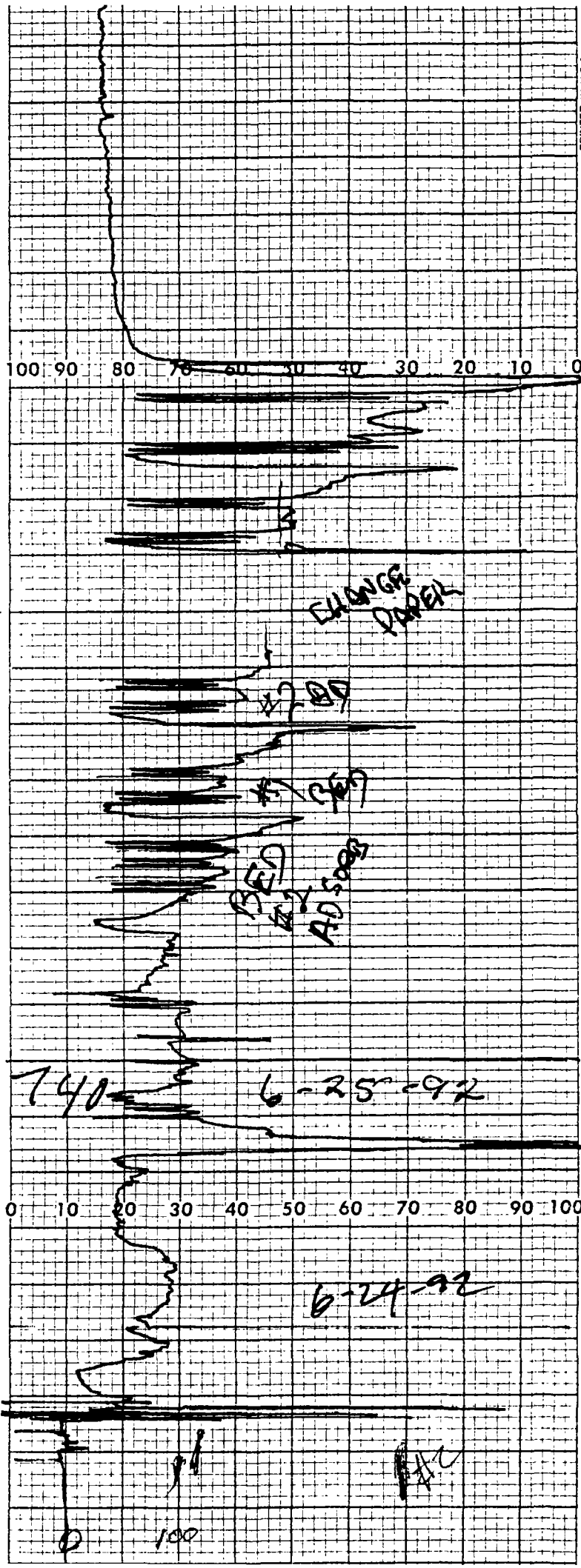
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5-18-92
19



Control Device Continuous Monitoring Records





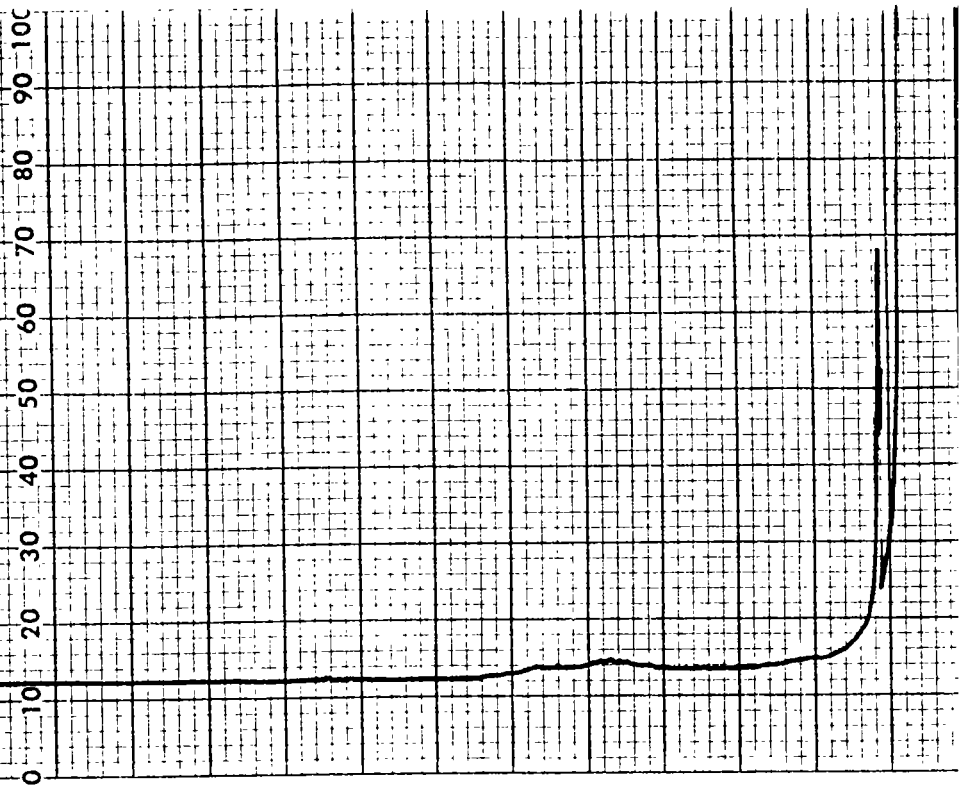
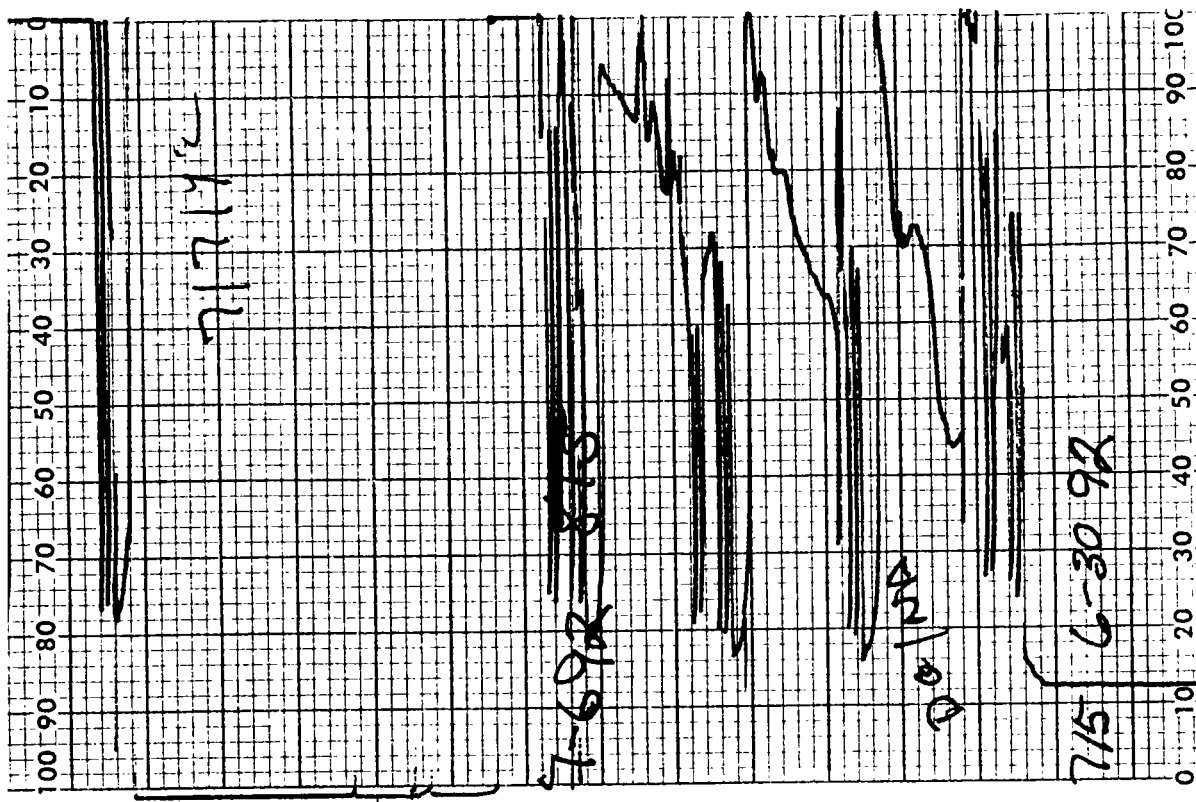
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740 6-27-92

715 6-27-92

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715 6-26-92



7/10

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7-9-92

7:15 AM

7-8-92

7:45

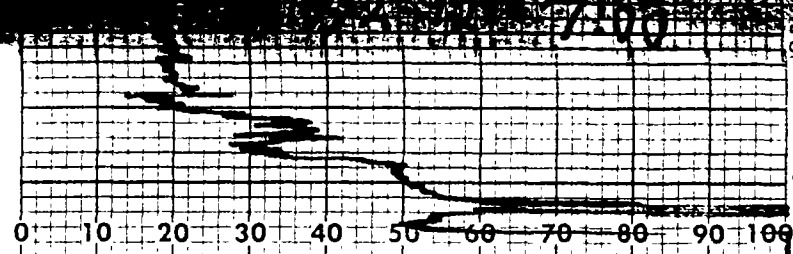
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97-18-92

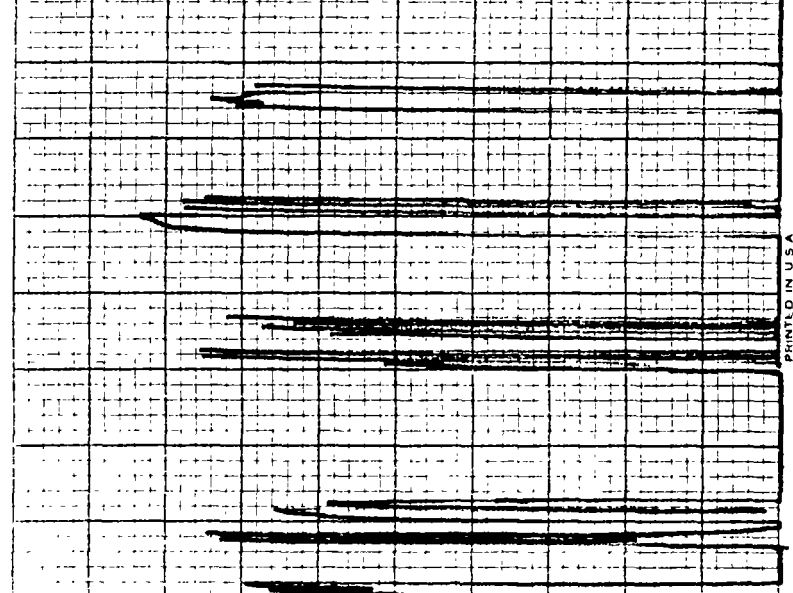
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785

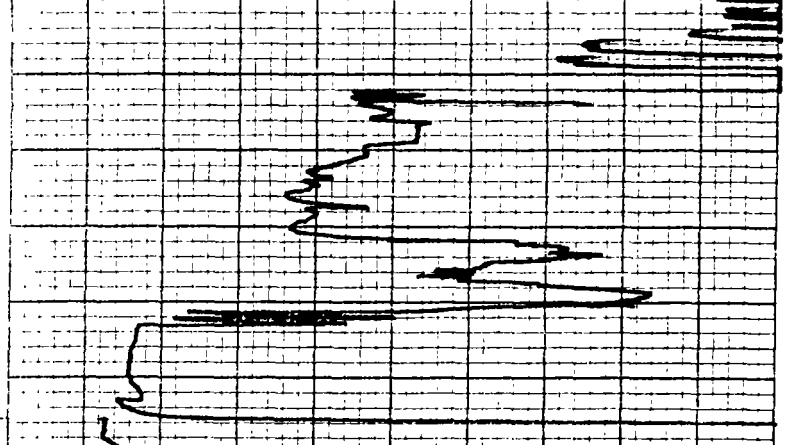
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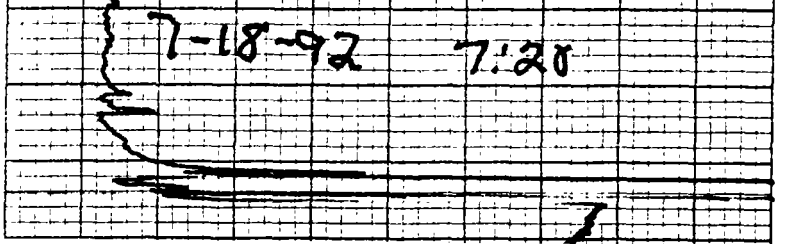
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7-20-92 7:30



7-18-92 7:20



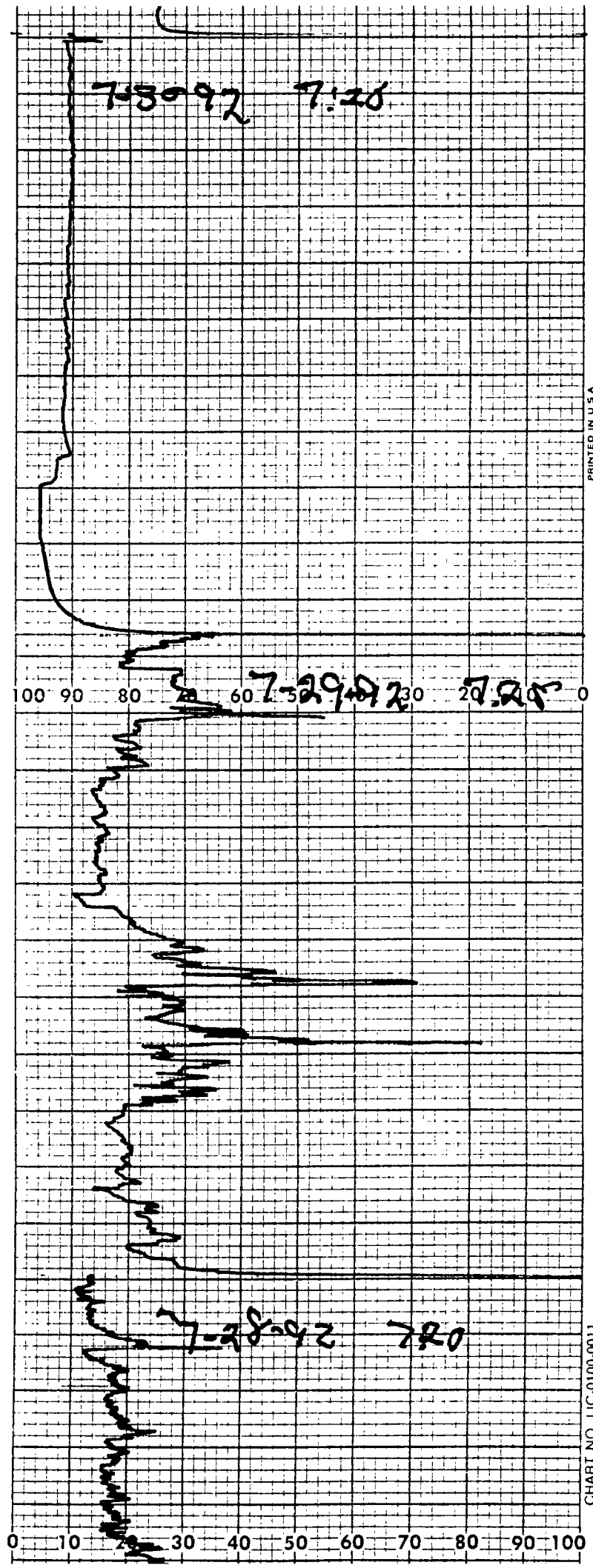
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7-24-92 7110

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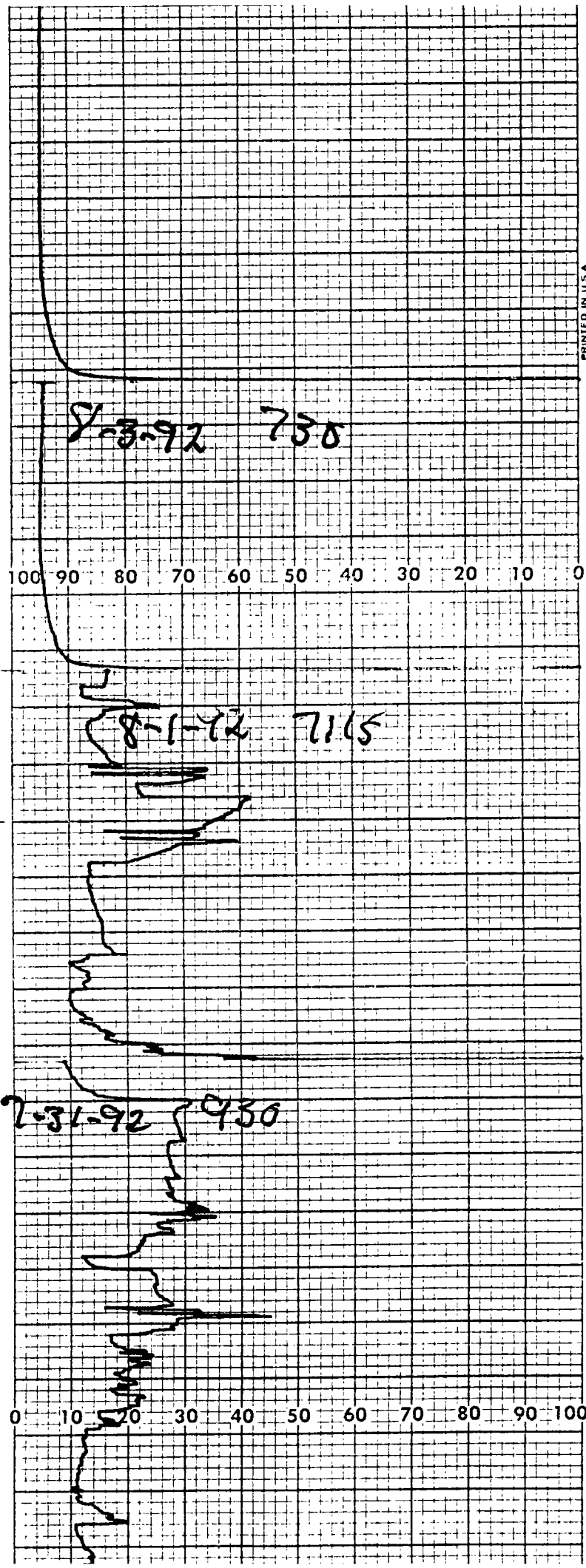
7-25-92 7120

7-22-92 7100



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CHART NO. LIC-0100-0011



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8-6-92 10:08

8-5-92 10:00

0 10 20 30 40 50 60 70 80 90 100

8-12-92 7:10

100 90 80 70 60 50 40 30 20 10 0

8-11-92 7:50

8-8-92 7:00

0 10 20 30 40 50 60 70 80 90 100

8-7-92 7:35

100 90 80 70 60 50 40 30 20 10 0

8-14-92 712

0 10 20 30 40 50 60 70 80 90 100

8-13-92 725

CHART NO LIC-0100-0011

EDM USA

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8-20-92 7:30

8-17-92 7:05

8-15-92 7:20

8-24-92 830

0 10 20 30 40 50 60 70 80 90 100

8-23-92 711

8-22-92 715

100 90 80 70 60 50 40 30 20 10 0

CHART NO. LIC 0100-0011

10.12.92 715

10.10.92 830

The graph shows a positive, non-linear relationship between the number of fish per square meter (n) and the total number of fish (N). The curve starts at the origin (0,0) and rises steeply at first, then gradually levels off as n increases, approaching a value of approximately 80 for both n and N .

10-09-92 705

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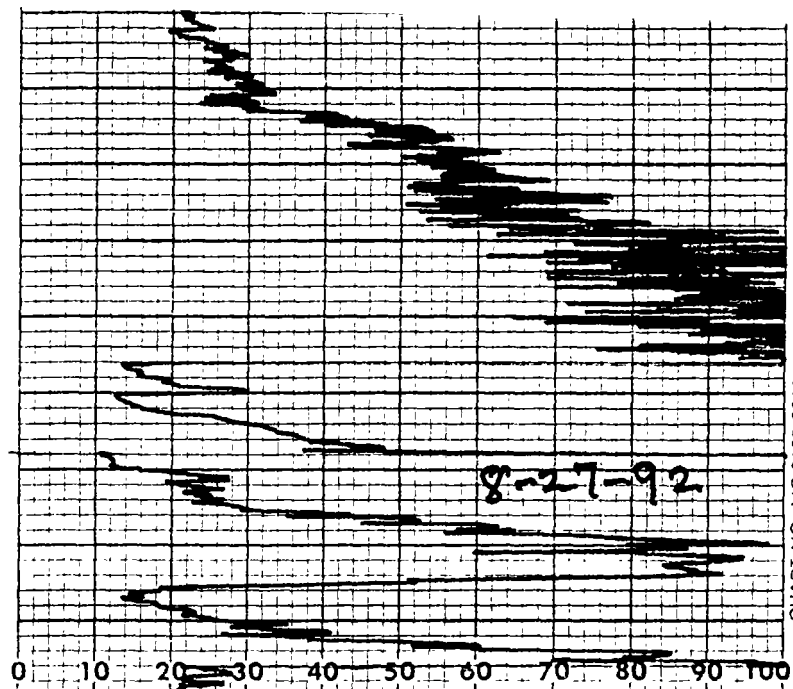
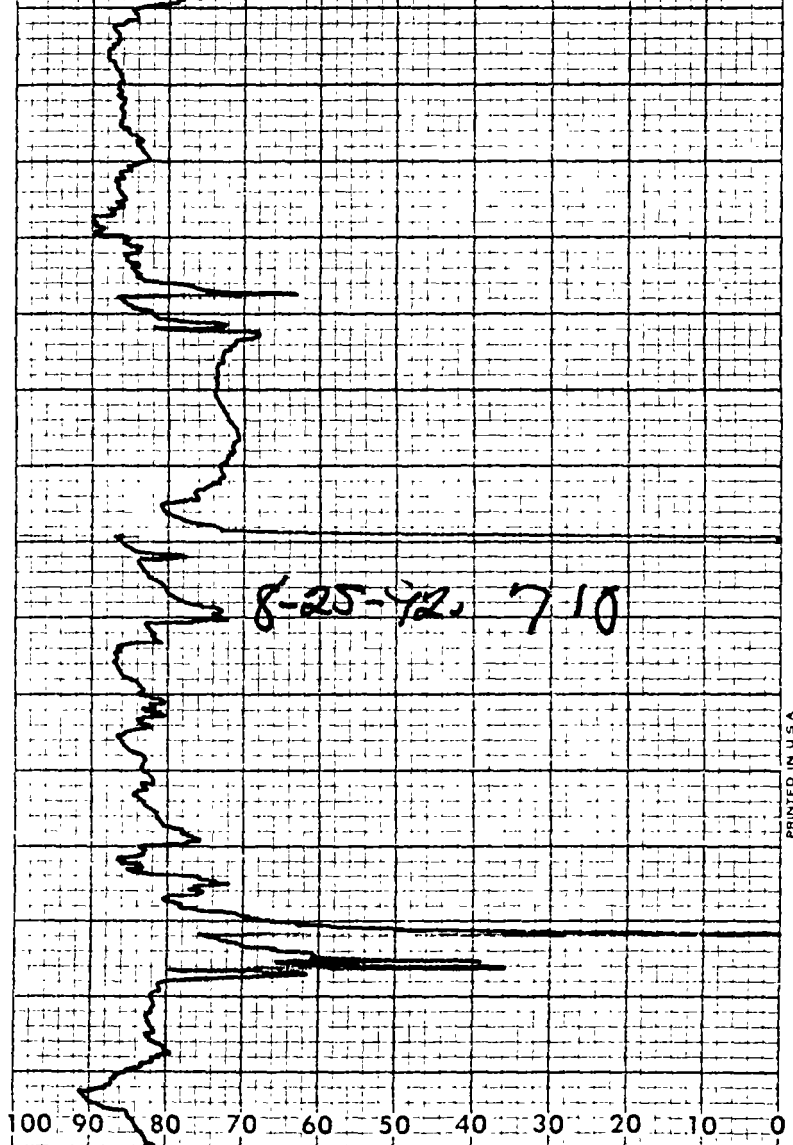
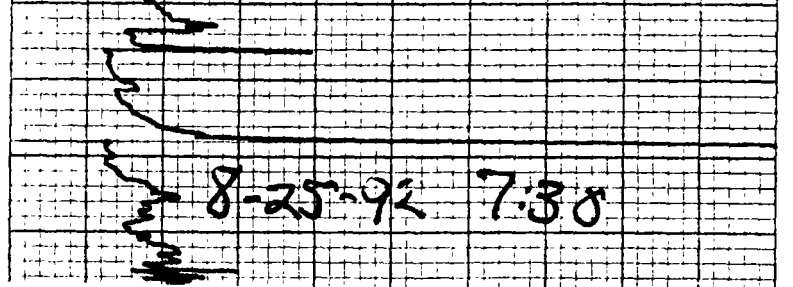
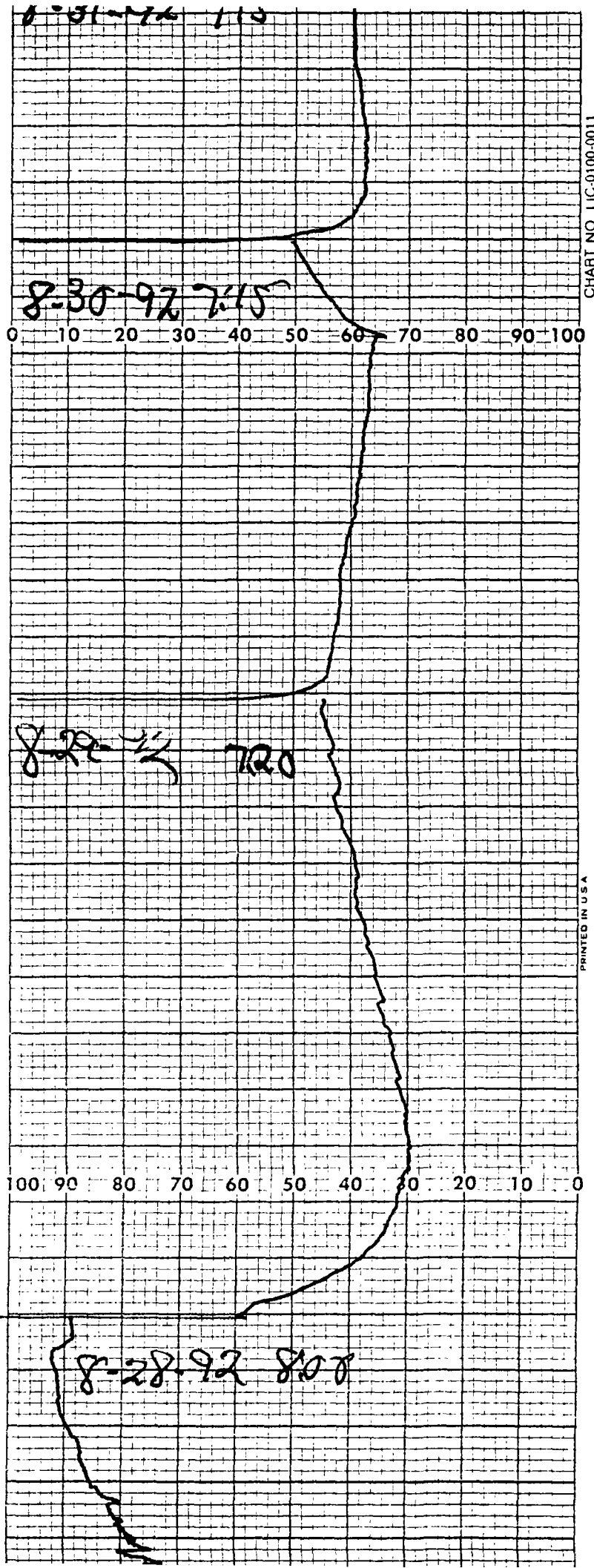


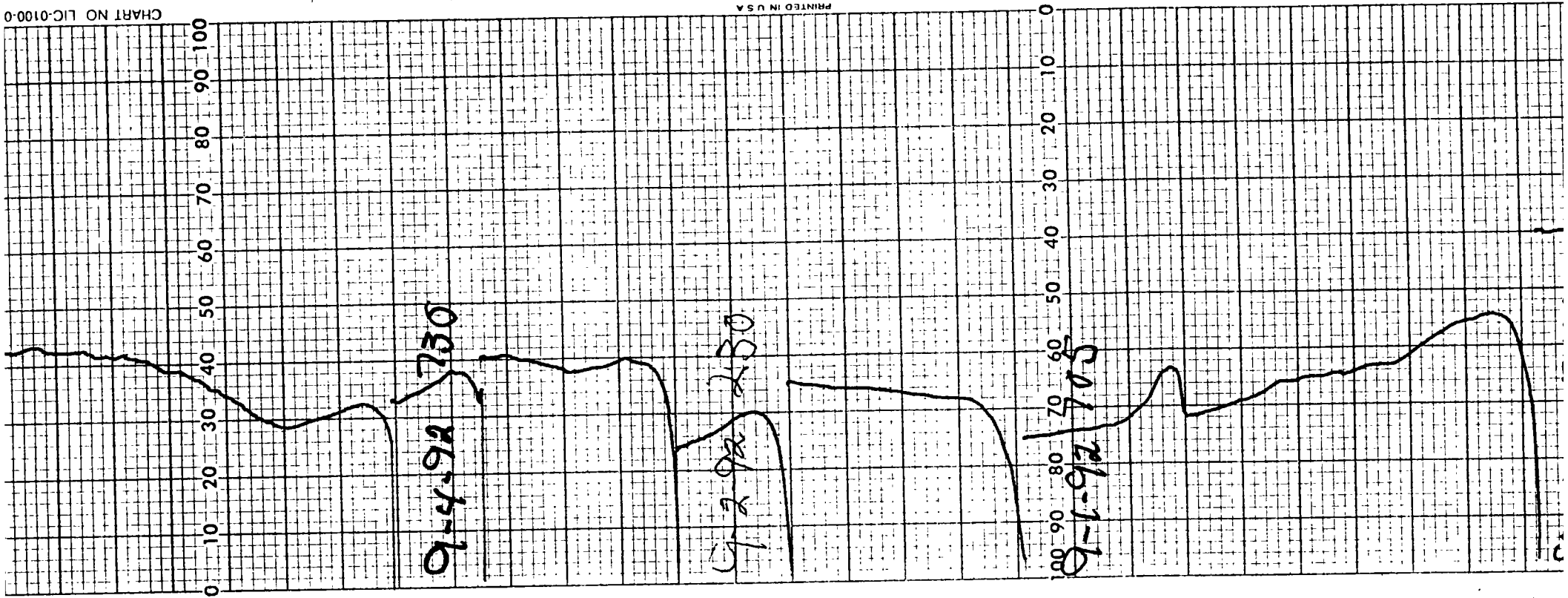
CHART NO LIC-0100-0011



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0 10 20 30 40 50 60 70 80 90 100

10-2-92

100 90 80 70 60 50 40 30 20 10 0

9-7-92 715

9-8-92 730

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VI 1

A present, there are no valves which are designated as unsafe to monitor.

VI 2

At present, there are no valves which are designated as difficult to monitor.

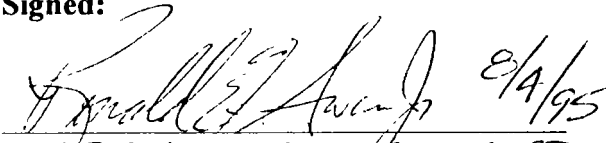
VI 3

Since there are no valves designated as either unsafe or difficult to monitor, there is not a requirement for a schedule for monitoring such valves. The percent of such valves found leaking is not applicable.

40 CFR 264.1035 (b) (iv) Certification Statement

I certify, under penalty of law, that the operating parameters used in the design analysis of the Detrex Model SVRM 2-6.5-3300 reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

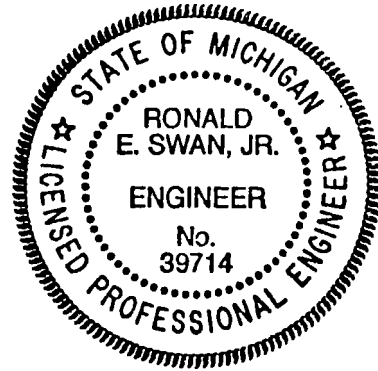
Signed:

 8/4/95
ON BEHALF OF DETREX CORP.

Ronald E. Swan, Jr. - CHMM, PE

Manager of Corporate Engineering

Detrex Corporation.



40 CFR 264.1035 (b) (iv) Certification Statement

I certify, under penalty of law, that the Detrex Model SVRM 2-6.5-3300 is designed to operate at an efficiency of 95% or greater unless the total organic concentration limit of 40 CFR 264.1032(a) is achieved at an efficiency less than 95% weight percent or the total organic emission limit of 40 CFR 264.1032(a) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent.

Signed:

Detrex Corporation, Equipment Division.